

BOSS POCKET DICTIONARY



a sound innovator
BOSS

RAM-711

Vol. **4**

A SOUND INNOVATOR—

The Boss theme of product development involves creating new and innovative products—products that are completely different from those currently available. We at Boss want you to create a new and exciting music scene through the use of Boss' compact effect pedals. Because we believe that they can make

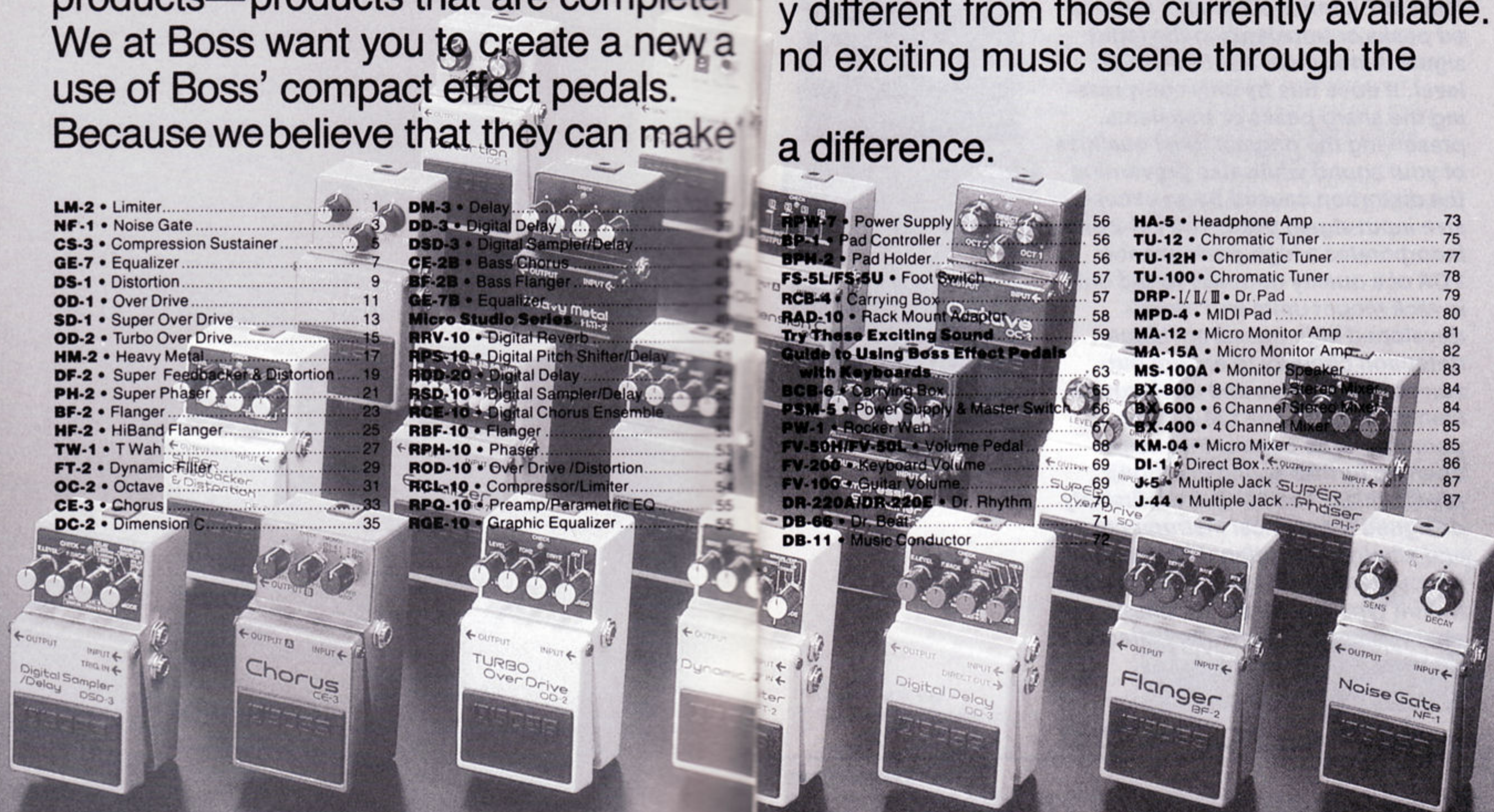
BOSS

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a difference.

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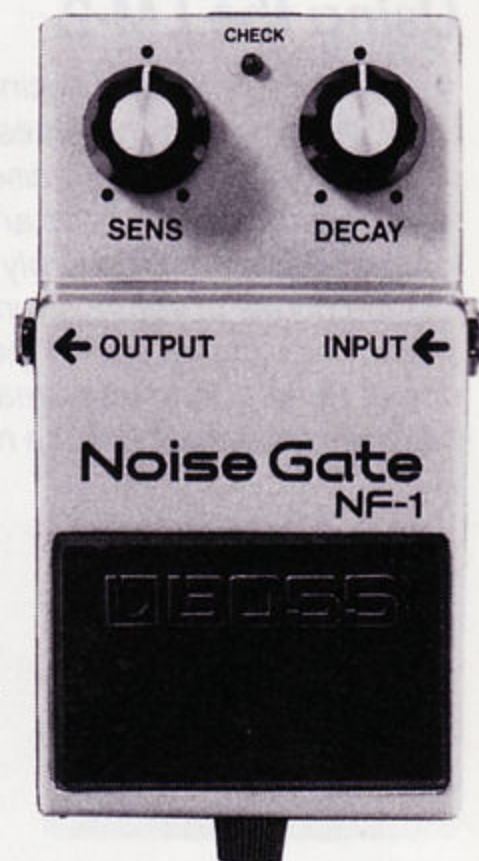
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NOISE GATE

NF-1 Noise Gate

The NF-1 Noise Gate cuts the annoying noise and hum that can be generated when pausing during a performance. The NF-1 is equipped with a Sensitivity control for adjusting the gating threshold in accordance to the ratio of noise to signal. A Decay control is also included for setting the length of decay for each note before the gate cuts in, while a wide 100msec to 1.6 second decay time control range allows the NF-1 to be used with virtually any musical instrument from guitars to keyboards. Ideal for eliminating the internal noise generated by musical instruments and other electrical or electronic equipments and the hum picked up by wires, the NF-1 can also be effectively used to shut out external noise from lighting fixtures, etc.

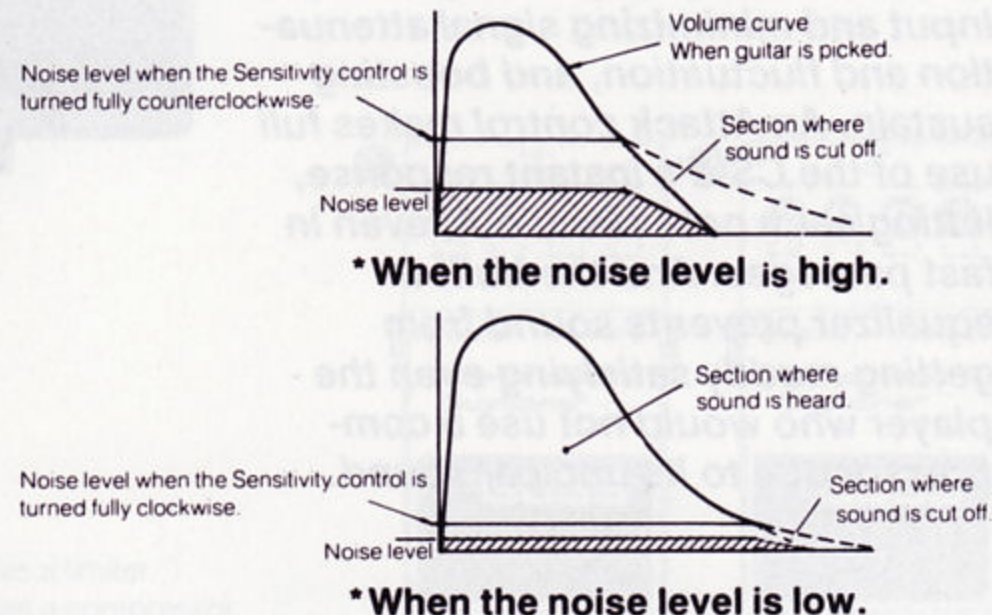


for **GUITAR** for **BASS** for **KEYBOARD**

Using the NF-1

- Usually, when several effect pedals are connected in a series, the NF-1 Noise Gate should be connected last.
- When a volume pedal is used, however, connect the NF-1 before connecting the volume pedal in order to prevent the delayed sound from breaking off and to prevent decaying of the sound.
- Proper adjustment of the Decay

control allows you to match any instrument's envelope and create a natural sounding decay effect. The sensitivity control eliminates the problem of the noise gate cutting into the decaying signal, thus preventing an abrupt or percussive ending to the sound. The following diagram should help you to use the NF-1 more efficiently.



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 3.9mA • Max. output: +9dBm • Gain: Unity • Input impedance: 470k Ω • Output load impedance: Over 10k Ω • Attack time: 1ms • Release time: 100ms-1.6 sec. (variable) • Gating threshold: -65 to -35dBm (variable) • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 400 g (0.88 lbs.)

COMPRESSION SUSTAINER

CS-3 Compression Sustainer

The CS-3 Compression Sustainer produces both compression and sustain effects by compressing high volume input signals and boosting low volume input signals. Designed for outstanding low-noise performance, the CS-3 incorporates an advanced real-time VCA circuit to eliminate distortion, even when a guitar with high-power humbucking pick-ups is used. The VCA lets the CS-3 carry out its compression and sustain functions at a much higher speed, instantly responding to any input and minimizing signal attenuation and fluctuation, and boosting sustain. An Attack control makes full use of the CS-3's instant response, letting each note stand out, even in fast passages. And the built-in equalizer prevents sound from getting muddy satisfying even the player who would not use a compressor due to its unclear sound.

for **GUITAR** for **BASS**

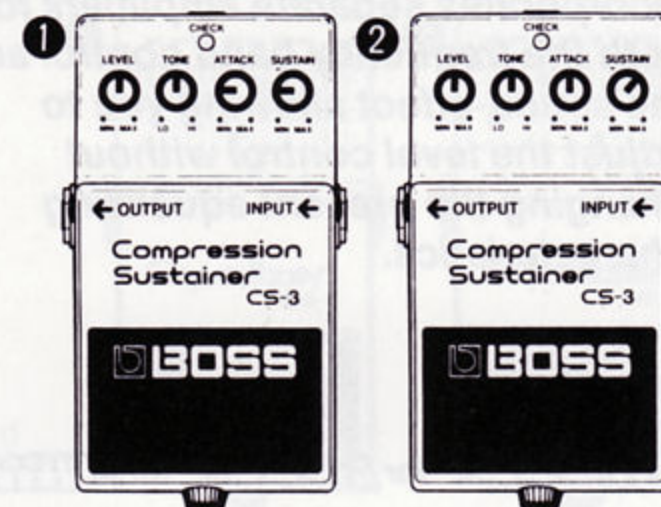


Using the CS-3

- Wide attack time adjustment range makes the CS-3 effective for fast passage notes of clarity without any loss in drive, as well as for slow phrases that make maximum use of sustain.
- The sustain function's wide variable range allows the CS-3 to be used as a limiter (Fig. 1). It is an effect pedal that's also ideal for rhythm guitar and bass. Though a compressor is generally used first

in an effects pedal set-up, when the CS-3 is employed for limiting, it should be used at the end.

- Make sure the sustain is not set to an excessively high setting (Fig. 2), as noise or feedback can be generated.
- Using a compressor will add a refined touch to the sound, and when combined with a chorus effect pedal, the effect is enhanced.



1. When used as a limiter.
2. When used as a compressor.

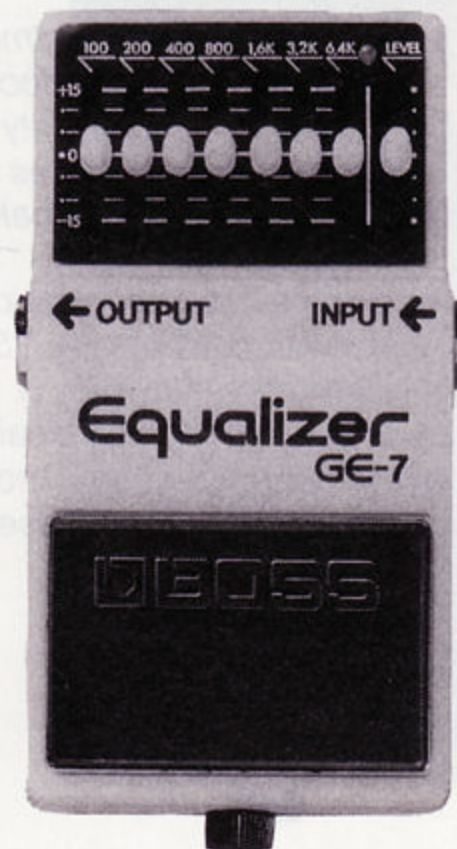
SPECIFICATIONS

Power: 9V Battery, AC Adaptor (BOSS ACA Series) • Current draw: DC 9V, 10mA
• Controls: level, tone, attack, sustain • Jacks: input, output, AC Adaptor • Maximum input: • 5dBm (1kHz) • Maximum output: - 10dBm • Compression range: 38dB
• Equivalent input noise: - 110dBm (IHF-A) • Input impedance: 1M Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) x 55(H) x 125(D) mm (2-3/4" x 2-3/16" x 4-15/16") • Weight: 400 g (0.88 lbs.)

EQUALIZER

GE-7 Equalizer

The GE-7 Equalizer effect pedal lets you create any desired tone by simply boosting or cutting a particular frequency or frequency range. Noise and howling can also be easily eliminated with a few simple adjustments. The GE-7 features 7 separate bands ranging from 100Hz all the way up to 6.4kHz, with cut and boost by up to $\pm 15\text{dB}$ per band. The seven octave bands are especially useful for cutting out annoying noise in the high-frequency range, and in emphasizing the sharp, high tones of harmonic overtones. And unlike conventional pedal equalizers, the GE-7 incorporates separate amplifiers for both the frequency band control and the sound-effect allowing you to adjust the level control without changing the present equalizing characteristics.



for **GUITAR** for **BASS** for **KEYBOARD**

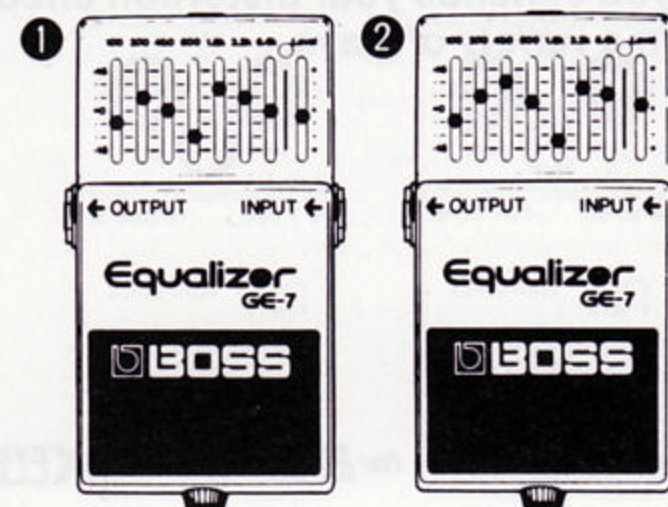
Using the GE-7

- By allowing you to perform boosts and cuts in the ultra-high frequency range of 6.4kHz, the GE-7 can be used for a wide range of applications, from creating delicate tones to effectively eliminating noise.
- By using the GE-7 with another effect pedal such as an overdrive or phaser, you can quickly and easily add your own sound preferences to an overdrive tone, or further enhance the sound of a phaser unit.

1. The GE-7 Equalizer is very effective for creating a wide range of unique sounds. For example, when the overdrive unit is used with

a guitar that has single-coil type pickups, a thin sound is produced. To solve this problem, connect the GE-7 and use it to boost the low and medium frequency bands until a fat, rich sound is produced (Fig. 1). On the other hand, for guitars with hum-bucking type pickups, the lower bands should be slightly suppressed.

2. Fig. 2 shows the setting used to prevent howling (feedback). The key to effectively using this setting is to sharply cut only that frequency which contains the howling in order to avoid changing the tone of the overall sound.



1. Setting for creating a fat, rich sound
2. One-point cut to prevent howling

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 7mA
 • Frequency centers: 100Hz, 200Hz, 400Hz, 800Hz, 1.6kHz, 3.2kHz, 6.4kHz
 • Control range: $\pm 15\text{dB}$ • Residual noise: -100dBm (IHF-A) • Input impedance: $470\text{k}\Omega$ • Output load impedance: Over $10\text{k}\Omega$ • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 450 g (0.99 lbs.)

DISTORTION

DS-1 Distortion

The DS-1 Distortion unit electrically clips the waveform of the original sound in order to produce the same distortion and sustain effects as a fully-driven amplifier. All of the nuances of guitar picking can also be correctly produced, rather than the toneless, fuzzy distortion that is created by other distortion units. A built-in Distortion control lets you adjust the degree of distortion so that you can freely create both soft and hard distortion effects. Specially-designed tone control circuitry, that always maintains the perfect balance between the high and low tones, lets you enhance your distortion effects in a variety of ways.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the DS-1

- When using the DS-1 with a chorus effect device, we recommend connecting the chorus effect device after the DS-1.
- Gradually turning the Tone control clockwise emphasizes the high-frequency band, creating sharp distortion effects. When doing this, however, be sure to adjust the volume settings on the amp and

guitar in order to prevent them from being excessively driven.

- Fig. 1 shows the setting used to create a soft, mellow distortion sound. When using this setting, the front pickup should be used.

- Fig. 2 shows the setting used to create a slightly harder distortion sound. When using this setting, the rear pickup should be used.



1. Soft distortion setting
2. Hard distortion setting

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 4mA • Input impedance: 470k Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) x 55(H) x 125(D) mm (2.8" x 2.2" x 4.9") • Weight: 400 g (0.88 lbs.)

OVER DRIVE

OD-1 Over Drive

The OD-1 Over Drive creates the mild, natural distortion effect of an overdriven tube amplifier without fundamentally altering the tonal characteristics of the guitar itself. Unlike hard-distortion effect pedals, the OD-1 allows the delicate nuances of picking and fingering to be faithfully and fully reproduced without disturbing the balance of the overall ensemble sound. Incorporating the Boss' unique asymmetric overdrive circuitry, the OD-1 produces an impressive effect without ruining guitar's natural harmonic overtones. Because of its clear sound, the OD-1 has become highly renowned among both professional and amateur musicians as the world standard for overdrive units.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the OD-1

- The OD-1 produces a mild, mellow distortion effect that is ideal for performances that emphasize delicate picking and fingering nuances.
- The OD-1 can produce distortion effects while maintaining the original tone, thus producing an impressive, soothing effect in any setting.
- The OD-1 is also effective for creating rich, guitar-like nuances

and drive effects on keyboards, especially synthesizers.

• Fig. 1 shows the setting used to create a conventional overdrive effect.

• Fig. 2 shows the setting used to create a warm and light distortion effect. This effect is produced by setting the Overdrive control at a slightly lower level and overdriving the amplifier.



1. Setting for a conventional overdrive sound.
2. Setting for a warm overdrive sound using the distortion of the amplifier.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 3.5mA • SN ratio: 80dB • Input impedance: 470k Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 400 g (0.88 lbs.)

SUPER OVER DRIVE

SD-1 SUPER Over Drive

By using to the fullest extent the characteristics of the guitar, the SD-1 Super Over Drive can produce the mellow and mild sounds of a fully-driven tube amplifier without changing the original tonal characteristics. The SD-1 is ideal for increasing the richness of a guitar's sound without losing the subtle nuances of the guitar player's picking and fingering. The SD-1 uses the same basic circuitry as the best-selling OD-1 Over Drive—the world's standard overdrive effect pedal—to produce exciting overdrive sounds without ruining the guitar's original harmonic overtones. The SD-1 is equipped with a Tone control which permits any desired boost or cut in the high-frequency band in order to produce more varied overdrive effects.



Using the SD-1

- Adjusting the Tone control allows you to create a wide variety of sounds, ranging from the DS-1's distortion sounds to the OD-1's overdrive sounds.
- Careful use of the Tone control lets you add attractive overdrive effects to various guitar and amplifier combinations without having to worry about whether they match a particular instrument.
- In order to produce an overdrive sound, care should be taken not to turn the Tone control fully clockwise.
- If a band in the high-frequency

range is boosted too much, it will produce large amounts of distortion when the Drive control is adjusted to higher levels. It is recommended that the Tone control be set at around 3 o'clock (clockwise).

- Fig. 1 shows the setting used to create a soft distortion effect with all the picking nuances.
- Fig. 2 shows the setting used to create a hard distortion effect. This effect was created by setting the Tone and Drive controls at very high levels.



1. Setting for creating a soft distortion effect.
2. Setting for creating a hard distortion effect.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 4mA • SN ratio: 80dB • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8"×2.2"×4.9") • Weight: 400 g (0.88 lbs.)

for **GUITAR** for **BASS** for **KEYBOARD**

TURBO OVER DRIVE

OD-2 TURBO Over Drive

Adding a new dimension to the usual overdrive effects, the OD-2 Turbo Overdrive creates an ultra-hard distortion effect when the Turbo is switched on—a sound that's just like a turbo-powered car. But even with the Turbo switched on, the OD-2 will let every delicate picking and fingering nuance come through perfectly. Another feature is easily obtainable natural feedback with minimal howling accompanying the feedback. Extremely sensitive discrete circuitry is employed in the OD-2's amplifier section, letting you produce impressive distortion effects while preserving all the original harmonic overtones. This latest and powerful Overdrive from Boss employs 2 different amplifier sections to give you regular overdrive as well as turbo overdrive.



for **GUITAR** for **BASS** for **KEYBOARD**

SPECIFICATIONS

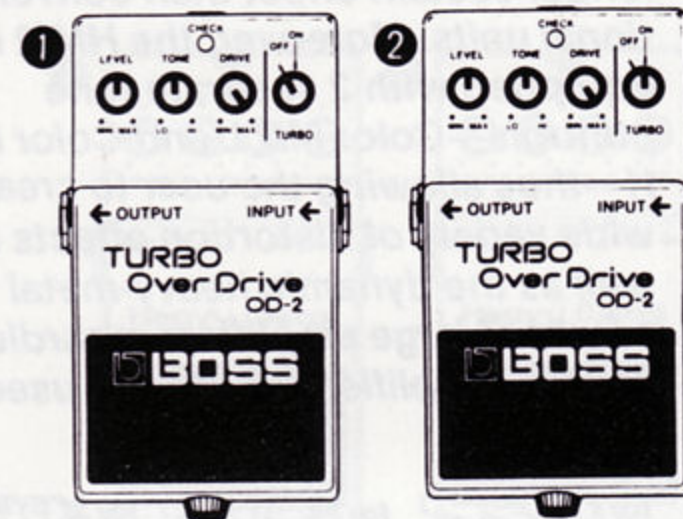
Power: 9V Battery, AC Adapter (BOSS ACA Series) • Current draw: DC 9V, 10mA
 • Controls: Overdrive, level, tone, turbo On/Off • Others: Effect On/Off select switch (FET switching), effect On/Off and battery condition LED indicator • Jacks: Input, output, AC Adapter • Equivalent input noise: -118dBm or/less (IHF-A, tone control at center, input short-circuited) • Input impedance: 1M Ω • Output load impedance:

Using the OD-2

- With the Turbo function switched off, Boss's very own mild and soft overdrive effect, the world's standard in overdrive effects, is produced.
- Switching the Turbo on produces a striking overdrive effect like you've never experienced, sounding like a turbo-powered car ready to blow up!
- With the Turbo on, gain is boosted tremendously, making

natural-sounding feedback easy to produce.

- If the Turbo is on, you can achieve full distortion even with single-coil pickup-equipped guitars. Remember to set Drive to a high setting. With this setting, excess distortion could result if guitars with humbucking pickups are used. If this happens, lower the Drive control till a satisfactory sound is achieved.



1. Shows a typical setting for Boss' overdrive effect, as produced by the OD-1 and SD-1.
2. Shows a setting used to create hard distortion even with single-coil pickups. An ideal sound for heavy-metal style guitar.

Over 10k Ω • Dimensions: 70(W) x 55(H) x 125(D) mm (2-3/4" x 2-3/16" x 4-15/16")
 • Weight: 410 g (14 oz.)

HM-2 Heavy Metal

The HM-2 Heavy Metal effect pedal is a state-of-the-art distortion unit that creates full-bodied distortion sounds while maintaining the nuances of the original tone rather than simply producing excessive distortion. Incorporating a newly-designed hard distortion circuit and an improved version of the OD-1 Over Drive effect pedal's renowned asymmetric over-drive circuitry, the HM-2 features a surprisingly wide dynamic range. Unlike conventional distortion units, the HM-2 does not cause the sound to thin out along with the distortion. The HM-2 also boasts a significantly longer sustain effect than conventional units. Moreover, the HM-2 is equipped with 2 separate tone controls—Color Mix L and Color Mix H—thus allowing the user to create a wide variety of distortion effects as well as the dynamic heavy-metal sound of large amplifiers regardless of what amplifier the HM-2 is used with.

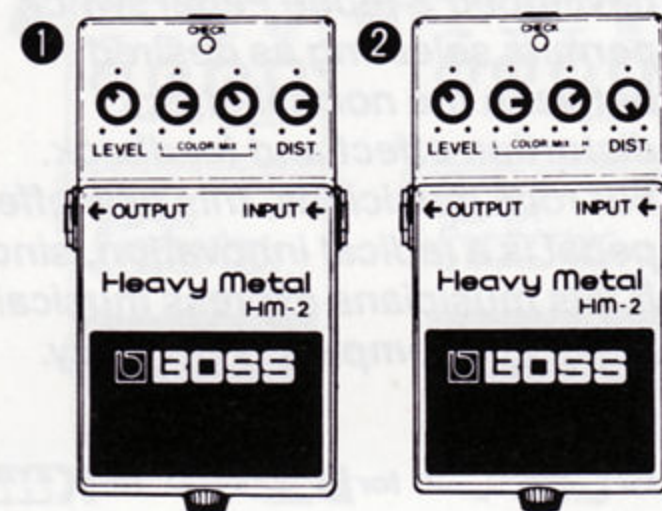
for **GUITAR** for **BASS** for **KEYBOARD**



Using the HM-2

- The HM-2 is a completely new distortion effect pedal that is radically different from conventional distortion and fuzz units.
- By effectively adjusting the 2 separate tone controls—Color Mix L and Color Mix H—the user can create a wide variety of heavy-metal effects.
- The Color Mix H tone control incorporates a variety of innovative circuits that allow the user to create the sounds appropriate for heavy-metal music.

- Even when using a low-output amplifier, the dynamic distortion sound of a large-size amp can be created.
- Fig. 1 shows the setting used to create heavy distortion that emphasizes the low frequency range. This setting is ideal for lead guitars that feature picking harmonics or heavy riffs.
- Fig. 2 shows the setting used to create a metallic sound that is effective for the feedback (rendition) or tricky arm-playing.



1. Setting used to create the heavy-metal sound.
2. Setting used to create a metallic sound.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 10mA • Input impedance: 1M Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 400 g (0.88 lbs.)

SUPER FEEDBACKER & DISTORTION

DF-2 SUPER Feedbacker & Distortion

Feedback effects that bring to mind stacks of huge amplifiers can now be enjoyed with any size amplifier with the DF-2 that contains hard distortion circuitry for creating dynamic effects. Just as importantly, the DF-2 lets you perfect innovative fingering techniques to produce feedback sounds. This is something many guitarists have long wished for and now it is a reality. Just depress the pedal: Feedback sounds are sustained for as long as the pedal stays down, and the sound is clearly natural, with all the harmonic overtones. The newly-developed 2-mode Pedal switch permits selecting as desired between the normal effect, distortion effect and feedback.

For rock musicians, this new effect pedal is a radical innovation, since it lets musicians express musical ideas in a completely new way.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the DF-2

- To change the function mode from Normal, Distortion and Feedback, simply depress the pedal.
 - The Distortion effect is switched on and off by short-stroke depressing of the pedal.
 - Pressing the pedal down further engages the Feedbacker function and the sound lasts as long as the pedal is depressed.
 - With the DF-2, feedback effects are easily achieved even with headphone amplifiers, without all the problems of selecting the right type of amplifier or the right settings.
- A built-in Overtone control allows the mixing of overtone components into the sound to produce natural-sounding feedback.



1. Setting used to create the heavy-metal sound.
2. Distortion setting for backing melody.

SPECIFICATIONS

Power: 9V battery, AC adapter (BOSS ACA series) • Current draw: 9V DC, 10mA
 • Controls: Distortion, Tone, Level, Over Tone • Others: 2-mode (Effect on/off and Feedback) foot switch LED on/off and battery condition indicator • Jacks: Input, Output, AC adapter • Input impedance: 1M Ω • Output load impedance: Over 10k Ω
 • Dimensions: 70(W) x 55(H) x 125(D)mm (2³/₄" x 2³/₁₆" x 4¹⁵/₁₆") • Weight: 450 g

SUPER PHASER

PH-2 SUPER Phaser

The PH-2 Super Phaser enables the player to vary the phase of the original sound and to adjust the phase depth as well as allowing sweep speed variance to an extraordinary degree. The Phase Shift mode control allows 12 stages of adjustment for smoother phase shifting and deeper phase effects. The 2 modes give completely different tonal qualities to suit all guitar, bass guitar and keyboard characteristics and provide phase effects of professional quality.

Using the PH-2

- Mode 1 gives your sound added depth of phase, ranging from the low frequency rattle all the way to the high notes with the 10 stage phase-shifting circuitry. This mode will ensure the maximum effect when used solely on your guitar.
- Mode 2 is a 12 stage phase-shifting circuitry produces phase effects sounds ideally suited for the guitars mixing boards as well as other musical playing and studio styles.
- Sweep speed variance ranges from 100% all the way to 14 sec. are adjusted by the Rate control while deeper sounding phase effects are available with the resonance control engineered to adjust feedback. The Sweep control allows each stage adjustment to create wide sweeping effects ranging from rotary speaker like effects to heart of sounds.

- Setting the existing use (Resonance) Swept Sounding
- Phaser guitar sound setting

SPECIFICATIONS
Power: 9V battery AC adapter (800mA RMS spread) • Current draw: 60 (100 - 20 mA) (line in) Controls: Rate Depth Resonance Mode Sweep Center (20) • Effects: Smooth North Face Swivel volume (P) 1 sweeping, 120 Battery Connection Indicator • LED: Input Output AC adapter • Frequency: 10 stages (200Hz - 17K spread) • Case: 100mm x 100mm metal • Weight: 100g (3.5oz) • Input: 100kΩ • Output: 100kΩ

Impedance: 1MΩ • Output Load Impedance: Over 100KΩ • Dimensions: 100mm x 100mm x 27mm • 27mm x 27mm • Height: 40mm (1.5in)

BF-2 Flanger

The BF-2 Flanger electronically creates a sound-delay effect and mixes the delayed sound with the original sound to create strong, dynamic sound effects with a wide variation of tones. Since the delay time is infinitely adjustable between 1msec and 13msec, and the LFO speed from 100msec to 16 sec, a much richer sound can be produced. Full, dynamic jet sounds and chorus sounds can also be produced by adjusting the 4 controls. In addition, the low-voltage BBD ensures both excellent delay characteristics and highly stable operation even when using a 9V battery. And of course, the entire BF-2 flanger unit features a low-noise design.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the BF-2

- The BF-2 has a wide control range that allows you to create the sound of a jet, as well as chorus and phaser effects. A good sense of sound-effect creativity is therefore very useful to users of the BF-2.
- Because the BF-2's unique sound has a stronger treble effect, it offers interesting effects for bass guitars.
- The BF-2 can also be effectively

- used with percussion instruments.
- Setting all controls to between 0 and 2 produces effects similar to those of a doubler (double-track).
- Fig. 1 shows the setting used for jet flanging.
- Fig. 2 shows the setting used for creating a metallic flanging sound. The key to this sound is to turn the RES control completely up and to turn the Depth control down to 0.



1. Setting for jet flanging.
2. Setting for metallic flanging.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 15mA • LFO (rate) speed: 100ms—16 sec. • Residual noise: -95dBm (IHF-A) • Input impedance: 470k Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 400 g (0.88 lbs.)

HF-2 Hi-Band Flanger

A definite step up from conventional flangers, Boss' new HF-2 Hi-Band Flanger flanges an overtone, one-octave higher than the original note. This results in flanging sound which is bright and clean. It's a speedy, whooshing sound effect that's perfect for guitar back-up of fusion music and synthesized string sounds. The HF-2 is the perfect choice for all those applications where conventional flangers just won't do! With 4 controls, this multi-purpose flanger will let you create the usual repertoire of flanging effects as well as a far-reaching range of tonal shadings.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the HF-2

- With its lilting flanging effect, the HF-2 suits fusion guitar and keyboard styles; an area where conventional flangers were unsuitable.
- For fusion guitar playing, chorus-like sounds are produced if the Resonance is lowered. Increase the Rate for vibrato sounds.
- With a synthesizer, using sounds with lots of overtones such as strings, will give you a much richer flanging effect. That's because the HF-2's ability to flange sound one octave higher than the original sound can be fully utilized.

- The key to setting up the HF-2 for optimally enhancing synthesized strings is to set the Rate lower and increase the Depth.
- Fig. 1 shows a sample setting of the HF-2 for use with synthesized strings.
- Increasing Resonance will make the HF-2 produce the typical sonic characteristics of flanging.
- If the Manual control is set a little lower than the midway point as shown in Fig. 2, a flanging effect typical of heavy metal guitars is produced.



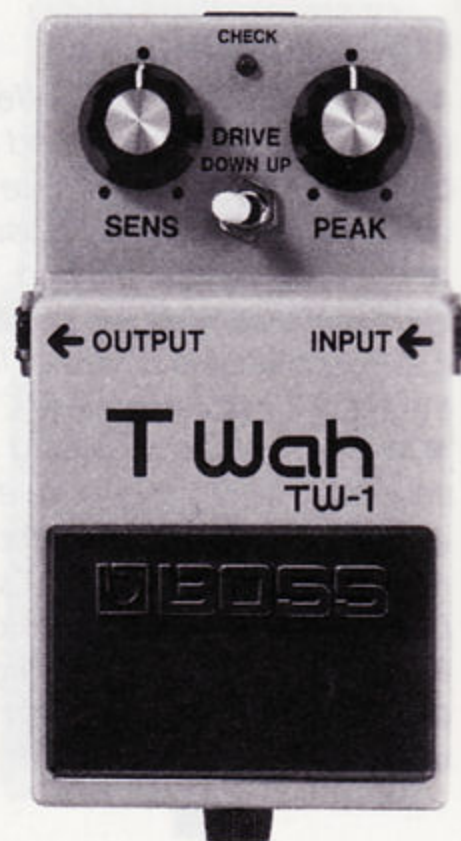
1. Setting to be used with synthesized strings.
2. Heavy metal guitar sound setting.

SPECIFICATIONS

Power: 9V Battery, AC Adapter (BOSS ACA Series) • Current draw: DC 9V, 18mA (maximum) • Controls: Manual, depth, rate, response • Jacks: Input, output, AC Adapter • Delay time: 0.5 to 6.5ms • LFO speed: 100ms to 16s • Residual noise: -95dBm (IHF-A) • Input impedance: 470kΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W) x 55(H) x 125(D) mm (2-3/4" x 2-3/16" x 4-15/16") • Weight: 400 g (14 oz.)

TW-1 T Wah

The TW-1 T Wah effect pedal produces a wide variety of wah effects by simply adjusting the volume and altering your picking technique. Automatic variations of tone according to the level of the input signal provides radical tone changes for hard picking, and delicate tone changes for soft picking. The TW-1 is therefore ideal for musicians who use sophisticated playing techniques. The use of a unique coil-type resonance circuit makes possible a number of amazingly natural wah effects. The TW-1 is also equipped with a Drive control that lets you choose any of the up (bass to treble) or down (treble to bass) wah effects to match any song you play. As a result, any desired wah effect can be used with any playing technique from hard, quick picking to delicate fingering.



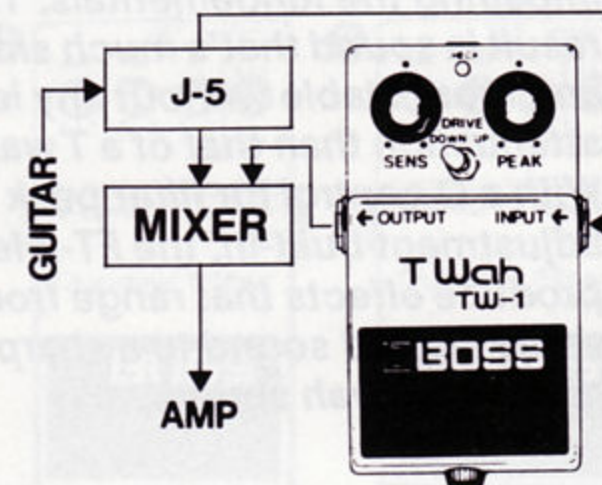
for **GUITAR** for **BASS** for **KEYBOARD**

Using the TW-1

- The TW-1 allows you to switch between the "up" wah and the "down" wah in order to match the tune being played. When using the down wah during stage performances, set the input signal level from the guitar slightly higher than you would normally. This will produce a much clearer sound.
- Effective adjustment of the tone adds an extra touch to the wah effects. Selection of the proper guitar pickup and careful adjustment of the tone knob are the keys to creating superior wah effects

with the TW-1.

- Ideally, an equalizer should be connected in series after the TW-1 in order to permit slight suppression of the unneeded high-frequency bands.
- Interesting effects can be created with the TW-1 while performing chopper bass or rhythm cutting on electric pianos.
- Fig. 1 shows the setting used to create a smooth and pleasant wah sound. This wah sound is mixed with the original sound by means of a Mixer.



Setting for creating a pleasant wah sound by mixing the original tone with the wah effect.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 6mA • SN ratio: Over 80dB • Input impedance: 470k Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 400 g (0.88 lbs.)

DYNAMIC FILTER

FT-2 Dynamic Filter

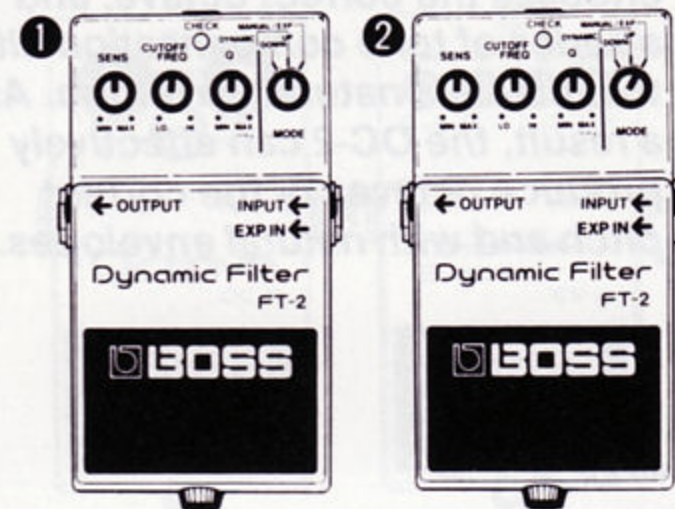
With the basic sound of a conventional wah-applied effect, the FT-2 Dynamic Filter makes a much more exciting sound possible through its Cut Off Frequency control that sets the center frequency where the effect occurs. Along with the Up/Down modes, a Manual mode is incorporated, letting the FT-2 perform as an equalizer for creating distinctive sound effects. With a Roland EV-5 expression pedal linked to the Exp In jack, the FT-2 takes on an active role as a wah pedal. A newly-developed envelope detection circuit only affects the harmonics without impairing the fundamentals. The result is sound that's much smoother and more stable without any level attenuation than that of a T wah. With a Q control for filter peak level adjustment built-in, the FT-2 lets you produce effects that range from a softly filtered sound to a sharp, distinctive wah sound.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the FT-2

- The Cut Off Frequency control is the secret to creating many effects with the FT-2.
- Setting the Mode Selector to the Dynamic Mode (Fig. 1), makes the FT-2 function as an auto wah unit that varies cut-off frequency according to picking force.
- Choose between UP (frequency goes up as the input level increases) and DOWN (frequency goes down as the input level increases).
- In the Manual/Exp mode (Fig. 2), the cut-off frequency is stable during picking so the filter frequency band can be varied with the cut-off frequency for equalizer-type use.
- Connecting an EV-5 to the Exp In jack while in the Manual/Exp mode transforms the FT-2 into an effective wah pedal.



1. For auto wah use.
2. For use as an equalizer.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (BOSS ACA Series) • Current draw: DC 9V, 16mA
• Controls: sens, cut off Frequency, Q control • Jacks: Input, Expression in, Output, AC Adaptor • Residual Noise: -85dBm (IHF-A) • Input impedance: 1M Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) x 55(H) x 125(D) mm (2-3/4" x 2-3/16" x 4-15/16") • Weight: 400 g (0.88 lbs.)

OC-2 Octave

The OC-2 Octave produces 3 separate tones—the original tone, the original tone dropped by one octave, and the original tone dropped by 2 octaves. By mixing these 3 separate tones at any desired level, the user can not only play octaves, but also create a thick wall of sound with a single guitar, thanks to the OC-2's unique 3-octave unison characteristics. The compact OC-2 incorporates state-of-the-art circuitry, including an SAF circuit that correctly samples only the basic waveform of the original tone, plus a high-speed phase inversion amplifier that chooses the correct octave, and a series of tone compensation filters that create a natural waveform. As a result, the OC-2 can effectively produce octaves of the correct pitch and with natural envelopes.



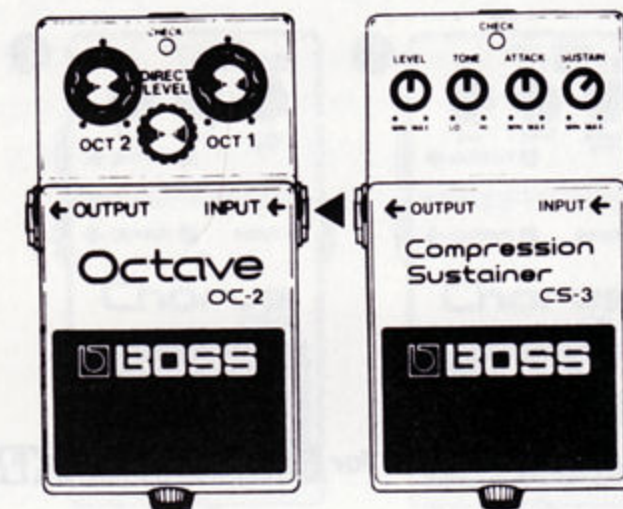
for **GUITAR**

Using the OC-2

- The key to effective use of the OC-2 Octave lies in properly balancing the volume of the 3 tones—the original tone, and the 1-octave lower and 2-octave lower tones.
- The tone that has been dropped by 2 octaves is ideal for adding depth to the original tone. Since the sound is likely to become less clear, however, this

lower tone should be carefully balanced with the original tone.

- A flanger and a phaser may be used together with the OC-2 in order to make the lower octave tones clearer.
- As shown in Fig. 1, a compressor can also be added in order to obtain more stable octave tones.



Linking the OC-2 Octave with the CS-3 Compressor in order to obtain more stable octave tones.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 4mA • Maximum input level: -5dBm • Maximum output level 0dBm • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Minimum operating input level: -60dBm (at 250Hz) • Equivalent input noise: -100dBm (IHF-A) • Dimensions: 70(W)×55(H)×125(D) mm (2.8"×2.2"×4.9") • Weight: 400 g (0.88 lbs.)

CE-3 Chorus

The CE-3 Chorus electronically creates fine deviations in pitch which can be overlaid onto the original sound to produce a soft, full sound, as if 2 sounds were being created at the same time. This outstanding effect is widely used for guitars and keyboards in solo performances and chord backings. The CE-3 can create a stereo effect from a mono signal input by means of the A and B outputs, and incorporates both Delay Rate and Depth controls, as well as a switch for selecting the stereo mode.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the CE-3

- In order to make optimum use of the CE-3, it is important to fully understand how the Stereo Mode control works.
- In Mode I, the signal at the A output jack is a combination of the direct signal plus a positive-phase effect signal (direct + effect), while the signal at the B output jack is a combination of the direct signal plus a reverse-polarity effect signal (direct - effect). The two outputs can be further combined and sent separately to two amps in order to create a true, wide stage stereo chorus sound with a lush, swirling and deep effect.

- In Mode II, only the effect signal is sent to the A output jack, and the B output jack receives no effect signal at all. This is the same configuration found on the original CE-1 and on Roland's well-known Jazz Chorus Amplifiers.
- When using the monaural setting, set the Stereo Mode control to Mode I.
- Fig. 1 shows the setting used for creating a conventional chorus effect.
- Fig. 2 shows the setting used for creating a vibrato chorus effect. In this setting, the Rate control is set at the highest position.



1. Conventional chorus effect
2. Vibrato chorus effect

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 13mA • SN ratio: Over 90dB (IHF-A) • Maximum input level: 0dBm (100Hz), -10dBm (1kHz) • Input impedance: 1M Ω • Output load impedance: Over 10k Ω • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 400 g (0.88 lbs.)

DC-2 Dimension C

The DC-2 Dimension C is the world's first compact effect pedal capable of creating the kind of "dimension" effects used in professional recording studios. Dimension effects are an essential part of playing and recording today. As implied in the name, a dimension effect adds thickness, depth and a sense of width to the sound—a 3D effect. It's a sound similar to the chorus effect, but with the DC-2, a more dynamic and a much wider type of effect is produced, with a minimum of the wavering that occurs in conventional chorus units. A more effective use would be to employ the DC-2 in a stereo mode through its 2 outputs. The built-in noise reduction circuitry keeps noise level down to those of studio rack units.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the DC-2

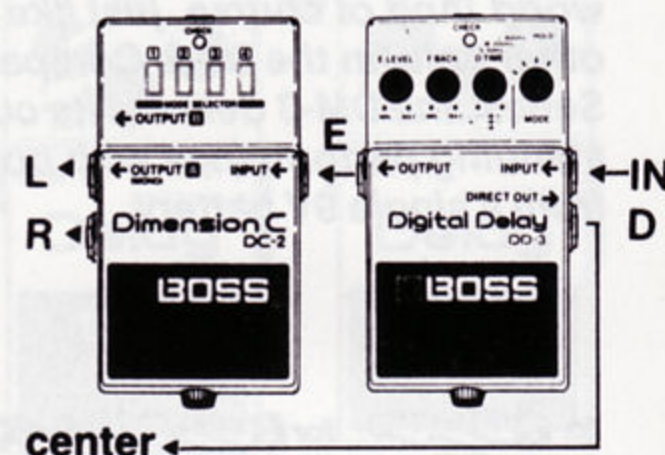
- The DC-2 comes with 4 selectable preset modes. By simply choosing the appropriate mode with the push-button selector, even a beginner can produce professional-sounding effects.
- The push-button selectors are numbered 1—4, with the effect intensity increasing as you go up.
- Mode 3 adds richness and depth to synthesized strings.
- Model 1 adds a very subtle dimension effect, producing full-bodied, wide-open sounds.
- Even in the monaural mode, the DC-2 can create a wider, better-

sounding effect than conventional chorus units.

- Using the Stereo mode with two amplifiers is the best way to bring out the full potential of the Dimension C's characteristics.

- In the Stereo mode, position the L-channel and R-channel speakers some distance apart from each other to expand your sound even further.

- Using the DC-2 in combination with a Digital Delay Unit (as shown in Fig. 2), lets you create a delayed stereo chorus or feedbacking chorus effect.



Trick play set-up using the DC-2 and a Digital Delay in combination.

SPECIFICATIONS

Power: 9V Battery, AC Adapter (PSA series) • Current draw: DC 9V, 30mA
 • Switches: Mode selector × 4 • Jacks: Input, output A, output B, AC Adapter • LED: Effect On/Off (battery condition) • Residual noise: -95dBm or less (IHF-A) • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W) × 55(H) × 125(D) mm (2-3/4" × 2-3/16" × 4-15/16") • Weight: 410 g (14 oz.)

DM-3 Delay

The DM-3 Delay provides an exceptionally wide range of delay effects in the range of 20 to 300msec by means of an adjustable Repeat Rate control. An Intensity control allows you to set the number of repeats, from a single slap back echo to self oscillation. The DM-3 employs a 2-output system that allows you to create 3-dimensional sounds with 2 amplifiers. Advanced circuits that suppress the distortion and noise ordinarily found in conventional delay circuitry. Together, these two circuits create the extremely clear sound which has made the DM-3 famous throughout the musical world. And of course, just like the other units in the Boss Compact Series, the DM-3 delivers its outstanding performance with power from a single 9V battery.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the DM-3

- Because the delay time can be adjusted over an extremely wide range, the DM-3 can create a wide variety of effects, including reverberation and an echo effect, all by simply adjusting the Repeat Rate control.
- The 2-output system lets you create 3-dimensional sounds with 2 amplifiers.
- As with the 2-output system, when only the main output (mono)

is used, the mixed sounds are output. When both outputs are used, the delayed sound and the normal sound are output separately, permitting the creation of much broader, deeper sounds.

- Fig.1 shows the setting for a conventional delayed sound.
- Fig.2 shows the setting for a single short-delay (doubler effect) sound. The key to this setting is to set the intensity control at "0."



1. Conventional delay sound setting.
2. Single short-delay sound setting.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (ACA Adaptor) • Current draw: DC 9V, 18mA • Delay time: 20ms to 300ms • Residual noise: -100dBm (IHF-A) • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W)×55(H)×125(D) mm (2.8"×2.2"×4.9") • Weight: 450 g (0.99 lbs.)

DIGITAL DELAY

DD-3 Digital Delay

The DD-3 compact digital delay employs the same 12-bit system found in more sophisticated, rack-mountable digital delays. The DD-3 also features a wide, variable delay time range from 12.5msec all the way up to 800msec—wider than that of any analog delay on the market today—plus an excellent frequency response that is flat over the entire 40Hz to 7kHz range. A unique hold function and two stereo outputs are also included, adding up to an effect pedal that musicians everywhere have been waiting for. The DD-3—creating new dimensions in sound reproduction.



for **GUITAR** for **BASS** for **KEYBOARD**

Using the DD-3

- Due to the wide 12.5msec to 800msec variable delay time range and the +1, -3dB frequency response over the entire 40Hz to 7kHz range, the DD-3 can produce a crystal clear delay sound, making it ideal not only for live performances but also for studio recording sessions.
- The desired hold effects can be produced within a range of 200msec to 800msec. By using the unlatch function, the hold effect will continue for as long as the pedal is pressed. For example, by setting the delay time at the tempo of the song to be played, you can take advantage of the DD-3's effects while

you are pausing, letting you develop your own unique ways of effectively using the DD-3 during ensemble performances.

- The DD-3's 3-stage (S/M/L) Delay Mode selector and find-adjustment Delay Time control work together to let you perform extremely precise adjustment of the delay time.
- Unlike analog delay units, the DD-3 can cleanly create such delay effects as repeat-echo and doubler effects.
- Two stereo outputs let you produce richer-sounding effects.



1. Tape echo-like delay setting.
2. Conventional short-delay setting.

SPECIFICATIONS

Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: DC 9V, 55mA (the D. Time control at center) • Type of A/D/A converter: 12-bit logarithm compression
 • Delay time: 12.5ms (min) to 800ms (max) • Residual noise: -95dBm (IHF-A)
 • Input impedance: 1M Ω (FET input) • Output load impedance: Over 10k Ω
 • Dimensions: 70(W) $\times$ 55(H) $\times$ 125(D) mm (2.8" $\times$ 2.2" $\times$ 4.9") • Weight: 450 g (0.99 lbs.)

DSD-3 Digital Sampler/Delay

Digital sampling and digital delay in one cost-effective package, attractively priced to bring sophisticated effect techniques to every musician. Superior sound quality and a high standard of performance is assured with the 12-bit A/D/A converter. With two modes (Rec/Play and Play), the DSD-3 allows the creative musician to add virtually any sound component to the music; from human voices and sounds of various instruments to animal sounds, auto engines and breaking glass. The recorded sample sound can be played back by depressing the pedal or by feeding a signal triggered externally into the DSD-3. Another interesting use is as an external sound source for rhythm machines. In this manner, the DSD-3's sample sound will be synchronized with the rhythm.



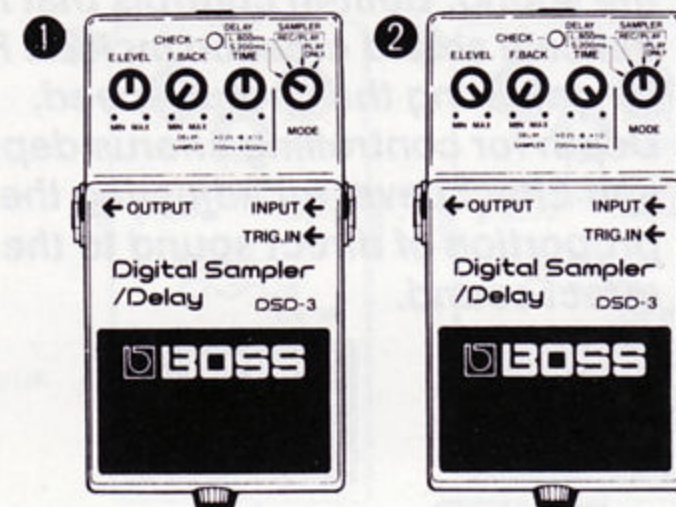
Using the DSD-3

- If used as a delay, delay time is continuously variable between 50ms and 200ms in the S mode, and from 200ms to 800ms in the L mode. The built-in Feedback control sets the number of repeats of the delayed sound as you desire, while the 12-bit A/D/A converter makes sure all the sounds are crystal clear.
- Used as a sampling machine, 2 modes are available, the Play and Rec/Play.
- In the Play mode, a recorded sample sound can be recalled whenever the pedal is depressed,

or when an external trigger signal is fed to the DSD-3.

- In the Rec/Play mode, a new sound can be recorded while a previously recorded sound is being replayed. Recording and replay is achieved simultaneously while the pedal is depressed.
- If the Feedback control is set to its maximum, repeated overdubbing is possible.
- The pitch of replay can be varied with the Time control.

* To record a desired sound into the DSD-3 for effects with the greatest fidelity, first record the sound on a tape recorder.



1. Conventional short-delay setting.
2. Sampler mode setting.

for **GUITAR** for **BASS** for **KEYBOARD**

SPECIFICATIONS

Power: 9V Battery, AC Adapter (PSA Adaptor) • Current Draw: 9V DC, 55mA • PCM System: 12-bit plus analog logarithm compression • Sampling mode: Sampling time (200 to 800ms, variable) Playback time (200 to 800ms, variable) • Delay mode: Delay time (50 to 200ms in S mode, 200 to 800ms in L mode, variable) • Frequency response: 40Hz to 7kHz (±1/3 dB) Sample/Delay 10Hz to 60kHz (±1/3 dB) Direct

• Residual noise: -95dBm (IHF-A) Effect - 100dBm or less (IHF-A) Direct
 • Controls: Effect Level, Feedback, Time, Mode • Jacks: Input, Output, Trig In, AC Adapter • Gain: Unity • Input impedance: 1MΩ • Output load impedance: Over 10kΩ • Dimensions: 70(W) x 55(H) x 125(D)mm (2 3/4" x 2 1/16" x 4 15/16") • Weight: 450 g (1 lb)

BASS CHORUS

CE-2B Bass Chorus

The CE-2B Bass Chorus creates a "chorus" effect by slightly shifting the pitch of the direct sound using a delay element. By mixing the direct and pitch-shifted sound so that they interact with each other, effects like sounds produced from two different sources can be utilized, and a wider and richer bass sound is the result. Since the chorus effect affects just the harmonics of bass sound without affecting the fundamentals, the original sound will not get muddy. While maintaining the bass's characteristic powerful sound and extension, an effective chorus effect can enhance the sound. Built-in controls that help delicate sound creation include Rate for adjusting the chorus speed, Depth for controlling chorus depth, and Effect Level for adjusting the proportion of direct sound to the effect sound.



Using the CE-2B

- Because the bass fundamentals are unaffected, the intensity of the effect, even if set at maximum, will not cause the bass' original power and clarity to deteriorate. The CE-2B provides bass players with the challenge of creating unique bass playing techniques.
- The key to successful sound creation with the CE-2B lies in good use of the Effect Level control.
- Use the Fig. 1 setting shown to produce a strong chorus effect for

bass soloing. Increasing the Effect Level to the maximum lets you to create a clear and wide chorus effect while retaining the original sound's contours.

- The Fig. 2 setting is for a shallower and lighter chorus effect ideal for normal bass lines. Even if the chorus effect is on when playing regular bass lines, there won't be any obnoxious aspects added to your bass sound.



1. Setting for creating an intense chorus effect
2. Setting for creating a light chorus effect

SPECIFICATIONS

Power: 9V battery, AC Adaptor (ACA series) • Current Draw: 9V DC, 10mA
• Controls: rate, depth, effect level • Jacks: input, output, AC Adaptor • Residual noise: -100dBm or less (IHF-A) • Maximum input level: 0dBm (at 100Hz) • Input impedance: 47k Ω • Output load impedance: Over 10k Ω • Dimensions 70(W) x 125(D) x 55(H) mm (2-3/4" x 4-15/16" x 2-3/16") • Weight: 400 g (0.88 lbs.)

BASS FLANGER

BF-2B Bass Flanger

The BF-2B Bass Flanger adds swirling and dynamic effects to your sound, opening up a world of intense tonal color variations. But as in the CE-2B, the bass fundamentals remain untouched with flanging added just to the harmonics. The original bass sound's punch and clarity is not diminished, and distinctive flanging is added to your bass sound for greater musical expression. Featuring a wide 100ms. to 16 second variable LFO rate range, the BF-2B's four controls offer a wide array of flanging effects, ranging from swooshing jet sounds through chorus-like effects and vibrato effects. A Manual control adjusts the delay time, while Depth determines the sweep range. Then use Rate to set the sweep speed and the Resonance control for adjusting the amount of feedback desired. And as with the BF-2, low-noise performance has been engineered into the BF-2B wherever possible.

for **BASS**



Using the BF-2B

- Bass fundamentals stay unaffected so the bass' original power and clarity are fully present, even if heavy flanging is used. The BF-2B offers the challenge of creating your own distinctive bass techniques.
- Different combinations of the BF-2B's four controls deliver numerous flanging effect variations.
- The setting illustrated in Fig. 1

produces a powerful jet flanging effect, ideal for heavy metal. The fundamental sound stays unflanged, so a powerful sound composed of flanging plus the original punch and tonal characteristics of bass sound may be enjoyed.

- If the Manual setting is lowered and the Resonance control set to zero, a soft chorus-like effect will result.



1. Jet flanging setting
2. Light chorus-like effect setting

SPECIFICATIONS

- Power: 9V battery, AC Adaptor (ACA series) • Current Draw: 9V DC, 14mA
- Controls: manual, depth, rate resonance • Jacks: input, output, AC Adaptor
 - Delay time: 0.5 to 6.5ms • LFO Rate: 100ms to 16s • Residual noise: -95dBm (1HF-A) • Input impedance: 470k Ω • Output load impedance: Over 10k Ω
 - Dimensions: 70(W) x 125(D) x 55(H) mm (2-3/4" x 4-15/16" x 2-3/16")
 - Weight: 400 g (0.88 lbs.)

BASS EQUALIZER

GE-7B Bass Equalizer

Engineered to help you create the most effective bass sound, the GE-7B will equalize any band from the seven specific frequency bands—as low as 62Hz right up to 4kHz. The wide-ranging frequency bands let you precisely tailor the bass guitar's tone color as desired—cutting or boosting any of the frequencies by up to 15dB. Features like these let the GE-7B take a prominent role in everything from producing a distinctive tailored sound to tonal correction and even feedback prevention. The Level control that adjusts the relative proportion of the direct and effect sounds is equipped with two independent amplifiers for frequency band and level uses. This eliminates any adverse effects the level control could have on the already equalized tonal characteristics. The actual quality of the sound receives the highest priority in the GE-7B.



for **BASS**

Using the GE-7B

- The bass guitar produces lower frequencies than guitars, even though its high frequencies are as high as a guitar's due to the higher-order harmonics. The GE-7B copes efficiently with such bass sound characteristics by covering those frequency bands (62Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz and 4kHz) most appropriate for bass guitars.

- By boosting 1kHz, the bass sound can be contoured for greater clarity (Fig. 1). Creating a dip at 4kHz really accentuates 1kHz.

- For heavy metal sounds, the Fig. 2 setting is the answer. Boost the 62Hz frequency band and also 4kHz for a heavy and powerful metallic sound.

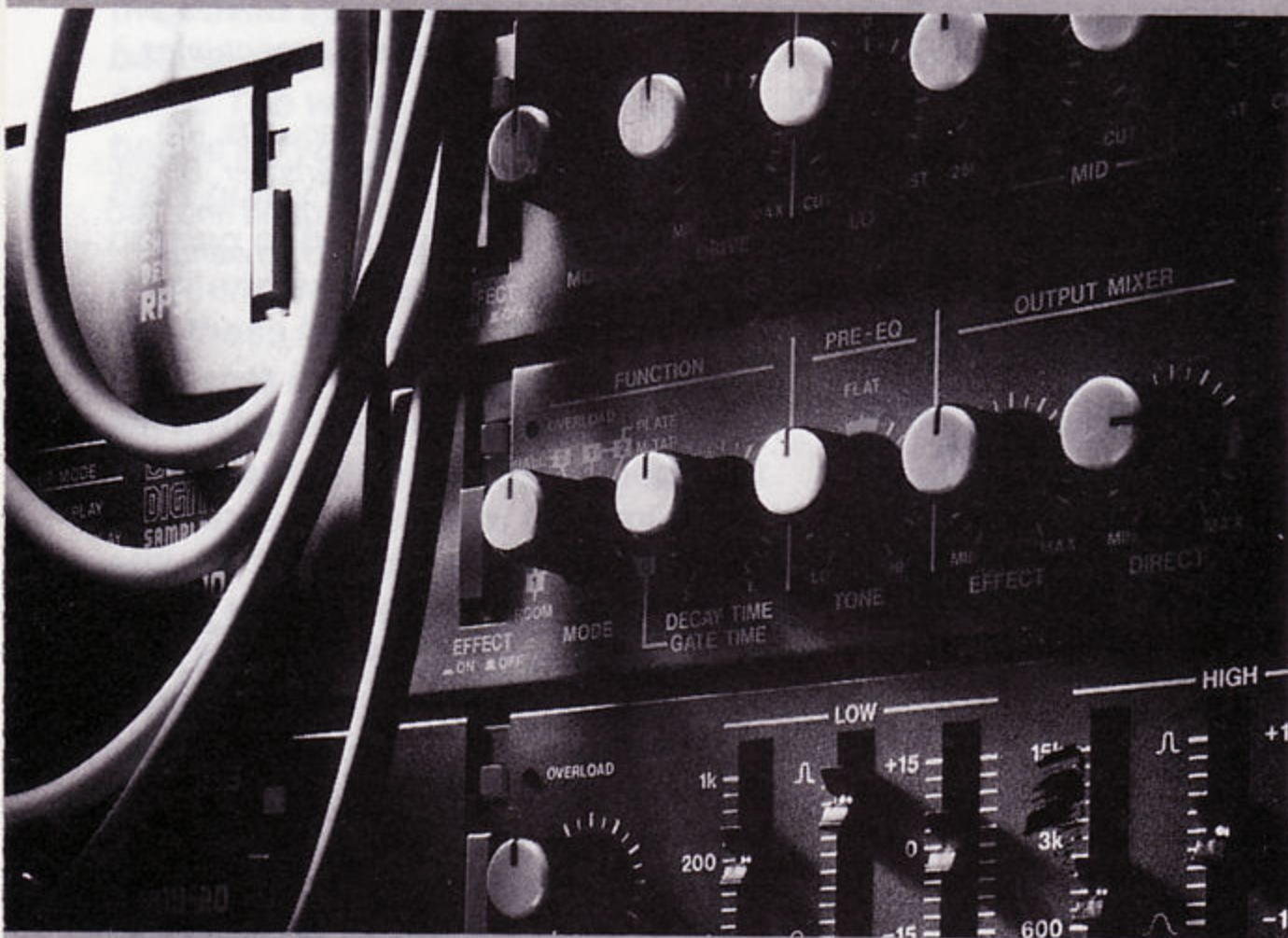


1. Setting for a clear, distinct bass sound
2. Heavy metal setting

SPECIFICATIONS

Power: 9V battery, AC Adaptor (ACA series) • Current Draw: 9V DC, 16mA
• Equalizer: 7 bands (62Hz, 125Hz, 250Hz, 500Hz, 1kHz, 2kHz, 4kHz), ± 15 dB
• Level Controls: ± 15 dB • Jacks: input, output, AC Adaptor • Residual noise: -100 dBm or less (IHF-A) • Input impedance: $470k\Omega$ • Output load impedance: Over $10k\Omega$ • Dimensions: 70(W) $\times$ 125(D) $\times$ 55(H) mm (2-3/4" $\times$ 4-15/16" $\times$ 2-3/16")
• Weight: 400 g (0.88 lbs.)

MICRO STUDIO SERIES



The Boss Micro Studio Series successfully integrates outstanding performance and a full range of functions fully comparable to those of full-sized racks into 1/2 rack-size units. The full line-up currently features 12 different models which have firmly established the Micro Studio Series' position as the leading star of rack-mount units. The Boss Micro Studio Series maximizes your creative potential for new dimensions in sound.

Size and performance to open up a new sound scene

Measuring just 218mm(W) x 44mm(H) x 160mm(D), each Micro Studio Series unit is one half the size of a conventional rack-mounted unit. Nothing however, is compromised in terms of functions and quality due to the compact dimensions. The Series' advanced specifications and complete range of functions even surpass those of professional-use units. For example, the RPS-10 achieves ultra-high speed shifting with virtually no time lag between the direct and effect sounds. The RRV-10

Digital Reverb is equipped with nine different modes to present sound creation possibilities to suit everything from small clubs to large concert halls. Compact enough for two units to fit a single rack shelf, the Micro Studio Series doubles functional and creative capability and represents a high degree of cost effectiveness, making it possible for the greatest number of players to enjoy the superior capabilities of the Boss Micro Studio Series.

RRV-10 DIGITAL REVERB

Nine reverb modes create appropriate sounds for everything from large halls and small clubs, to gated and reverse reverb. Pre-equalizer plus Input

Cancellation system turns off the effect without abrupt cut-off of the reverb sound. New noise reduction circuitry minimizes noise.



SPECIFICATIONS

Input Level/Input impedance: -20dBm/1M Ω , -10dBm/47k Ω • Output Level/Output Impedance: -20dBm/2k Ω , -10dBm/2k Ω • Output Load Impedance: Over 10k Ω • Frequency response: 10Hz to 30kHz $\pm 1/3$ dB (Direct), 30Hz to 10kHz $\pm 1/3$ dB (Effect) • Sampling Rate: 31.5kHz • A/D-D/A Conversion System: 12-bit converter plus analog logarithm compression • Residual Noise: -100dBm or less (IHF-A, Level switch at -20dBm) • Controls: Decay/Gate Time, Pre Equalizer, Effect Level, Direct Level • Jacks: Input (Phone, Pin), Output A (Phone, Pin), Output B (Phone, Pin), Effect Remote (On/Off) • Power Source: 9V DC by PSA series AC Adaptor or RPW-7 Power Supply • Dimensions: 218(W) x 169(D) x 44(H) mm (8-9/16" x 6-11/16" x 1-3/4") • Weight: 900 g (2 lb.)

RPS-10 DIGITAL PITCH SHIFTER / DELAY

Single unit combining a digital shifter with a continuously variable pitch shift range of ± 1 octave and a digital delay. Newly-developed LSI enables

flat and extended (to 15kHz) frequency response plus ultra-high speed pitch conversion. TU-12 Tuner connects for confirmation of pitch shift amount.



SPECIFICATIONS

• Input level/input impedance: $-20\text{dBm}/1\text{M}\Omega$, $-10\text{dBm}/47\text{k}\Omega$ • Output level/output impedance: $-20\text{dBm}/2\text{k}\Omega$, $-10\text{dBm}/2\text{k}\Omega$ • Output load impedance: Over $10\text{k}\Omega$ • Pitch shift: -1 oct. to $+1$ oct. • Delay time: 25ms to 800ms • Frequency response: Direct/10Hz to 30kHz ($\pm \frac{1}{3}$ dB), Pitch shift/delay: 40Hz to 15kHz ($\pm \frac{1}{3}$ dB) • Residual noise: Under -90dBm (IHF-A level switch; -20dBm) • Controls: Delay range/pitch shift mode, pitch, pitch fine/delay time fine, feedback level, mix balance • Switches: Power, effect (On/Off), level ($-20\text{dBm}/-10\text{dBm}$) • Indicators: Power, effect • Jacks: Input (standard phone, pin), Output (standard phone, pin), Hold (On/Off), Effect remote (On/Off), Tuner out, Keyboard control • Power Source: 9V DC by PSA series AC Adaptor • Current draw: 100mA • Dimensions: 218(W) x 44(H) x 169(D) mm (8-9/16" x 1-3/4" x 6-11/16") • Weight: 900 g (2 lb.)

RDD-20 DIGITAL DELAY

The RDD-20 employs a 12-bit PCM system plus analog logarithm compression for high quality compatible with a 16-bit system. Continuously

variable delay time between 0.75 to 400ms. with flat frequency response up to 15kHz. Also equipped with Delay Tone control.



SPECIFICATIONS

• PCM System: 12-bit plus analog logarithm compression • Delay Timer Controls: Range (1.5, 3, 6, 12.5, 25, 50, 100, 200, 400ms), Fine ($\times 0.5$ to $\times 1$) • Frequency Response: 20Hz to 15kHz ($\pm \frac{1}{3}$ dB) Delay, 10Hz to 60kHz ($\pm \frac{1}{3}$ dB) Direct • Modulation Controls: Rate (0.07Hz to 10Hz), Depth • Feedback Control: Level • Modulation BUS Jack: 1 • Modulation Polarity Switch: 1 • Remote Jack: Effect On/Off • Input Level/Impedance: $-20\text{dBm}/1\text{M}\Omega$, $-10\text{dBm}/47\text{k}\Omega$ • Output Level: -20dBm , -10dBm • Output Load Impedance: Over $10\text{k}\Omega$ • Power Source: 9V DC by PSA series AC Adaptor • Dimensions: 218(W) x 44(H) x 169(D) mm (8-9/16" x 1-3/4" x 6-11/16") • Weight: 900 g (2 lb.)

RSD-10 DIGITAL SAMPLER / DELAY

The RSD-10 combines digital sampling ability to turn any keyboard into a sampling keyboard with digital delay. Up to 2 seconds sampling time with

possible scale production of over 2 octaves. Using a Boss BP-1 pad controller, a sampling effect similar to percussion can also be created.



SPECIFICATIONS

• Input level/input impedance: $-20\text{dBm}/1\text{M}\Omega$, $-10\text{dBm}/47\text{k}\Omega$ • Output level/output impedance: $-20\text{dBm}/2\text{k}\Omega$, $-10\text{dBm}/2\text{k}\Omega$ • Output load impedance: More than $10\text{k}\Omega$ • Type of A/D/A converter: 12 bit + analog logarithm compression • Sampling time: Max. 2,000ms • Delay time: 2 to 2,000ms • Frequency response: Direct; 10Hz to 30kHz ($\pm \frac{1}{3}$ dB), Sampler/delay: 20Hz to 7kHz ($\pm \frac{1}{3}$ dB), (Fine $\times 0.25$) • Residual noise: -95dBm (IHF-A level switch; -20dBm) • Input range of the external pitch control: C5 (523Hz) to C7 (2093Hz) • Controls: Delay range/sampler mode, delay time fine/sampler pitch, playback trim, feedback/overdub level, delay/sampler level • Switches: Power, effect (On/Off), level ($-20\text{dBm}/-10\text{dBm}$) • Jacks: Input (standard phone, pin), output (standard phone, pin), pitch control input (standard phone, pin), pad control input (BP-1), trigger control input (as well used for the DP-2), effect remote (On/Off), AC Adaptor (IN, OUT) • Indicators: Power, effect, overload, recording • Power Source: 9V DC by PSA series AC Adaptor • Current draw: 100mA • Dimensions: 218(W) x 44(H) x 169(D) mm (8-9/16" x 1-3/4" x 6-11/16") • Weight: 1 kg (2 lb. 3 oz.)

RCE-10 DIGITAL CHORUS ENSEMBLE

A 100% digital chorus with a digital modulation circuit and 2-phase chorus circuitry for spacious, impressive chorus effects. A Pre-Delay Time

control allows doubling the chorus effect and a built-in effect equalizer helps create a precisely tailored sound.



SPECIFICATIONS

Input Level/Input Impedance: $-20\text{dBm}/1\text{M}\Omega$, $-10\text{dBm}/47\text{k}\Omega$ • Output Level/Output Impedance: $-20\text{dBm}/2\text{k}\Omega$, $-10\text{dBm}/2\text{k}\Omega$ • Output Load Impedance: Over $10\text{k}\Omega$ • Sampling Frequency: 50kHz • Sampling System: 12 bit quantizing system plus analog logarithmic compression • Residual Noise: Below -100dBm (IHF-A, Level Switch: -20dBm) • Controls: Pre delay Time (0.5—35ms), Modulation Rate (0.1—14Hz), Modulation Depth, Effect Equalizer, Effect Level • Switches: Power (On/Off), Effect (On/Off), Level ($-20\text{dBm}/-10\text{dBm}$) • Indicators: Power, Effect • Jacks: Input (Standard, Pin), Output A (Standard, Pin), Output B (Standard, Pin), Effect Remote (On/Off), AC Adaptor (In/Out) • Power Source: 9V AC by PSA Series AC Adaptor • Current Draw: 80mA • Dimensions: 218(W) x 169(H) x 44(D) mm (8-9/16" x 6-11/16" x 1-3/4") • Weight: 900 g (2 lb.)

RBF-10 FLANGER

A stereo flanger with D + E and D - E outputs. Significantly higher S/N ratio achieved with noise reduction system allows the RBF-10 to work with keyboards and vocals. Modulation

Manual, Feedback Level and other versatile controls help create everything from impressive jet sounds to chorus-like effects.



SPECIFICATIONS

• Controls: Modulation Manual (Delay Time: 0.4ms to 3.2ms), Modulation Rate (100ms to 16s), Modulation Depth, Feedback Level, Mix Balance • Input Level/Impedance: -20dBm/1M Ω , -10dBm/47k Ω • Output Level: -20dBm, -10dBm • Remote Jack: Effect On/Off • Modulation BUS Jack: 1 • Modulation Polarity Switch: 1 • Power Source: 9V DC by PSA series AC Adaptor • Dimensions: 218(W) x 44(H) x 169(D) mm (8-9/16" x 1-3/4" x 6-11/16") • Weight: 900 g (2 lb.)

RPH-10 PHASER

12-stage phase circuitry and three distinct modes let the RPH-10 create effects from light to intense degrees. Boss' original custom IC in the phase-shifting circuitry makes for smoother

phasing and the Modulation Manual control provides continuous adjustment of frequency where phasing occurs. Noise reduction system incorporated as well.



SPECIFICATIONS

Modes: I, II, III • Controls: Modulation Manual Modulation Rate (100ms to 14s), Modulation Depth, Feedback Level • Phase Shift: Mode I/6 stages (1080°), Mode II/10 stages (1800°), Mode III/12 stages (2160°) • Gain Unity • Input Level/Impedance: -20dBm/1M Ω , -10dBm/47k Ω • Output Level: -20dBm, -10dBm • Output Load Impedance: Over 10k Ω • Remote Jack: Effect On/Off • Modulation BUS Jack: 1 • Modulation Polarity Switch: 1 • Power Source: 9V DC by PSA series AC Adaptor • Dimensions: 218(W) x 44(H) x 169(D) mm (8-9/16" x 1-3/4" x 6-11/16") • Weight: 900 g (2 lb.)

ROD-10 OVER DRIVE / DISTORTION

Five independent circuits—three overdrives, distortion and fuzz, along with a 3-band equalizer including a parametric Mid, present countless

sound creation possibilities. Built-in Line Out jack facilitates direct connection to a mixer for stage, studio and many other applications.



SPECIFICATIONS

Input Level/Input Impedance: -20dBm/1M Ω • Output Level/Output Impedance: -20dBm/2k Ω • Output Load Impedance: Over 10k Ω • Controls: Mode, Drive, Equalizer LO, Equalizer MID Frequency, Equalizer MID Level, Equalizer HI, Output Level • Switches: Power (ON/OFF), Effect (ON/OFF) • Indicators: Power, Effect • Jacks: Input, Output, Line Outputs (Standard, Pin), Effect Remote (ON/OFF), AC Adaptor (IN, OUT) • Power Source: 9V DC by PSA Series AC Adaptor • Current Draw: 50mA • Dimensions: 218(W) x 169(D) x 44(H) mm (8-9/16" x 6-11/16" x 1-3/4") • Weight: 900 g (2 lb.)

RCL-10 COMPRESSOR / LIMITER

A dynamics processor integrating compressor, limiter, expander and noise gate functions. Key-In jack allows the unit to perform as a de-

esser or to gate echo, and a Stereo Link jack lets you interlock two RCL-10 units. A high-performance VCA guarantees clear, distortion-free sound.



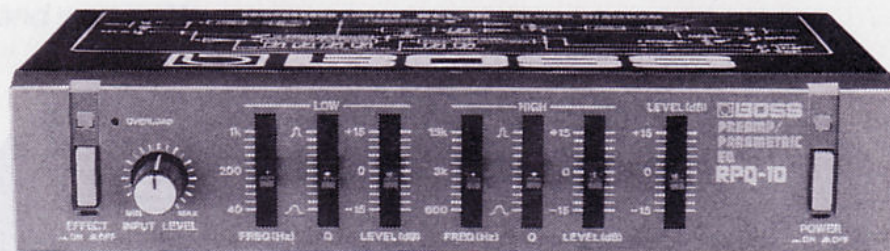
SPECIFICATIONS

Compressor/Limiter/Expander: Ratio 1:1.5 to ∞ :1 continuously variable Threshold -40 to 0dBm (Level switch at -20dBm) Attack Time 0.2ms to 50ms, Release Time 50ms to 2s • Noise Gate: Threshold - ∞ to -10dBm (Level switch at -20dBm) Output Gain (Effect) - ∞ to +14dB • Input Level/Impedance: -20dBm/1M Ω , -10dBm/47k Ω • Output Level: -20dBm, -10dBm • Output Load Impedance: Over 10k Ω • Remote Jack: Effect On/Off • Power Source: 9V DC by PSA series AC Adaptor • Dimensions: 218(W) x 44(H) x 169(D) mm (8-9/16" x 1-3/4" x 6-11/16") • Weight: 900 g (2 lb.)

RPQ-10 PREAMP/PARAMETRIC EQ

The RPQ-10 features a built-in pre-amplifier and 2-band (High and Low) parametric equalizer for precise tonal control with a variable boost/cut range

of $\pm 15\text{dB}$ for dynamic and impressive sound effects. Each slider has its own LED.



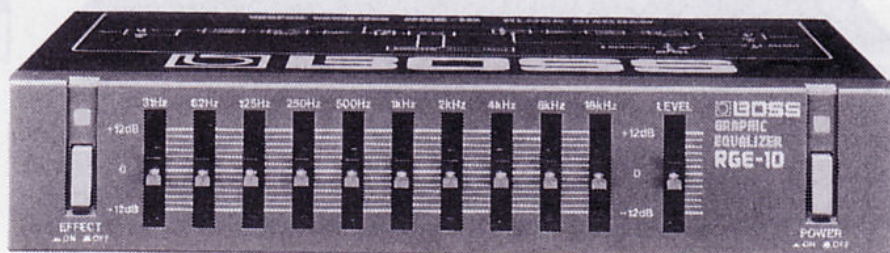
SPECIFICATIONS

- Input level (rated)/input impedance: MIC; $-50\text{dBm}/1\text{k}\Omega$, INST; $-20\text{dBm}/1\text{M}\Omega$, LINE; $-10\text{dBm}/50\text{k}\Omega$
- Output level (rated)/output impedance: Standard phone; $-20\text{dBm}/2\text{k}\Omega$, pin; $-10\text{dBm}/2\text{k}\Omega$
- Output load impedance: More than $10\text{k}\Omega$
- Frequency response (line input): 10Hz to 40kHz ($\pm 0.3\text{dB}$ at flat)
- Residual noise: -95dBm (IHF-A at flat) (no input connection, standard jack output)
- Center frequency: Low band 40Hz to 1kHz (4.6 oct), high band 600Hz to 15kHz (4.6 oct)
- Q: 0.7 to 7
- Variable level range: $\pm 15\text{dB}$
- Controls: Input level/1, frequency/(slider volume with LED)/2, Q (slider volume with LED)/2, level (center click, slider volume with LED)/3
- Switches: Power, effect (normal/equalizer)
- Jacks: Input jacks (standard phone; MIC, INST/pin; LINE), output jacks (standard phone, pin), effect remote jack (On/Off), AC Adaptor jack (IN, OUT)
- Indicators: Power, effect, overload (input), overload (total level, LED flashing system)
- Power Source: 9V DC PSA series AC Adaptor
- Current draw: 60mA
- Dimensions: $218(\text{W}) \times 44(\text{H}) \times 167(\text{D})\text{ mm}$ ($8\text{-}9/16" \times 1\text{-}3/4" \times 6\text{-}9/16"$)
- Weight: 900 g (2 lb.)

RGE-10 GRAPHIC EQUALIZER

For quick and refined tonal compensation, this 10-band equalizer can cut or boost 12dB in each of the 10 octave bands from 31Hz to 16kHz . Each slide

control is provided with an LED indicator for at-a-glance indication of your setting, even on dark stages.



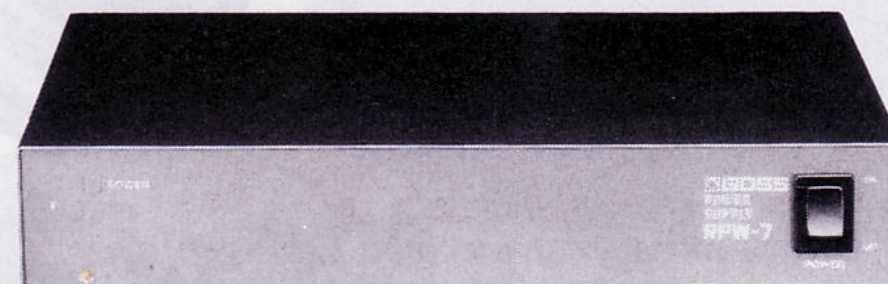
SPECIFICATIONS

- Equalization $\pm 12\text{dB}$, 10 sliding controls each with an LED
- level Control: $\pm 12\text{dB}$, Sliding control with an LED
- Input Level/Impedance: $-20\text{dBm}/1\text{M}\Omega$, $-10\text{dBm}/47\text{k}\Omega$
- Output Level: -20dBm , -10dBm
- Gain: Unity
- Output Load Impedance: Over $10\text{k}\Omega$
- Remote Jack: Effect On/Off
- Power Source: 9V DC by PSA series AC Adaptor
- Dimensions: $218(\text{W}) \times 44(\text{H}) \times 160(\text{D})\text{ mm}$ ($8\text{-}9/16" \times 1\text{-}3/4" \times 6\text{-}5/16"$)
- Weight: 900 g (2 lb.)

RPW-7 POWER SUPPLY

For use with Micro Studio Series units, the RPW-7 supplies 9V DC power up to 700mA . Five DC outputs are provided. If the AC adaptor for each Micro Studio Series unit is used, the RPW-7

can supply power to more than five units. Moreover, by using the PSA adaptor, power may be supplied to Boss compact effect pedals.

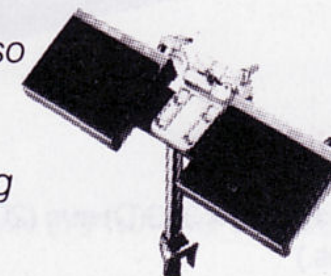


SPECIFICATIONS

- Rated output voltage: 9V DC
- Output current: 700mA (maximum)
- Power switch: 1
- Power indicator: 1
- DC out jacks: 5
- Power: $117/220/240\text{V AC}$ (50/60Hz)
- Power consumption: 22VA (maximum)
- Dimensions: $218(\text{W}) \times 42(\text{H}) \times 140(\text{D})\text{ mm}$ ($8\text{-}9/16" \times 1\text{-}5/8" \times 5\text{-}1/2"$)
- Weight: 1.2 kg (2 lb. 10 oz.)

BP-1 PAD CONTROLLER

The BP-1 Pad Controller lets you initiate the sampled sound from the RSD-10 Digital Sampler/Delay just by hitting the pad. The pad's sensitivity can be adjusted with the Sensitivity control and the pad also controls the dynamics of the sampled sound when used with the RSD-10—the harder you hit it, the louder the sound. The BP-1 can also be used as a pad controller for drum sound sources. An optional BPH-2 pad holder allows mounting the pad controller on a tomtom stand.



SPECIFICATIONS

- Pad: 1
- Output jack: 1
- Sens knob: 1
- Output impedance: $100\text{k}\Omega$
- Dimensions: $152(\text{W}) \times 58(\text{H}) \times 144(\text{D})\text{ mm}$ ($6" \times 2\text{-}5/16" \times 5\text{-}11/16"$)
- Weight: 730 g (1 lb. 10 oz.)

BPH-2

SPECIFICATIONS

- Dimensions: $375(\text{W}) \times 40(\text{H}) \times 130(\text{D})\text{ mm}$ ($14\text{-}3/4" \times 1\text{-}9/16" \times 5\text{-}1/8"$)
- Weight: 700 g (1 lb. 9 oz.)

FS-5U/5L Foot Switch

Boss Foot Switches suit any performance

Two or more FS-5L (latch type)/FS-5U (unlatch type) Foot Switches can be connected. Both units have Polarity switches to match any equipment, even of opposite polarity. The FS-5L's LED indicator gives at-a-glance indication of effect on/off, and both have phone jacks to allow any cable length.



SPECIFICATIONS

(FS-5L) • Power: UM-3 × 2 • Current draw: 6mA • Dimensions: 96(W) × 43(H) × 90(D) mm (3-1/4" × 1-3/4" × 3-1/2") • Weight: 240 g (0.52 lbs.) (FS-5U) • Dimensions: 96(W) × 43(H) × 90(D) mm (3-1/4" × 1-3/4" × 3-1/2") • Weight: 230 g (0.5 lbs.)

RCB-4 Carrying Box

Added versatility for the Micro Studio Series

This road case (19" rack compatible) accommodates four Micro Studio Series units. Remove the front and rear protection covers and you're ready to play! The heavy duty body securely protects the units during transportation.



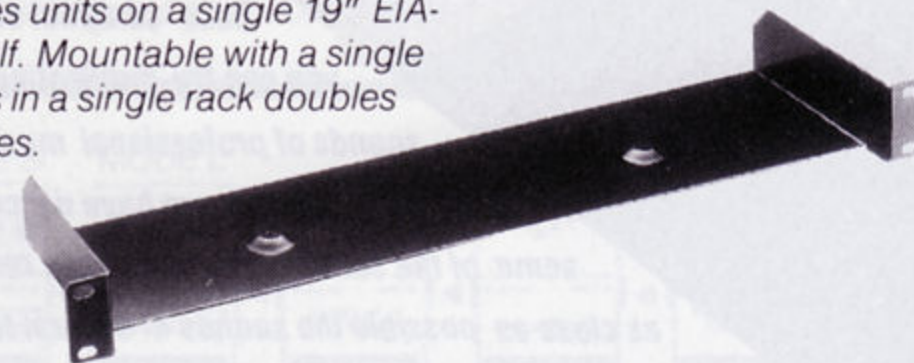
SPECIFICATIONS

Dimensions: 520(W) × 122(H) × 343(D) mm (20-1/2" × 4-3/4" × 13-1/2")
• Weight: 5.0 kg (11 lbs.)

RAD-10 Rack Mount Adaptor

For easy mounting to a conventional 19" rack shelf

Specially designed adaptor for mounting two Micro Studio Series units on a single 19" EIA-standard rack shelf. Mountable with a single screw. Two effects in a single rack doubles creative possibilities.

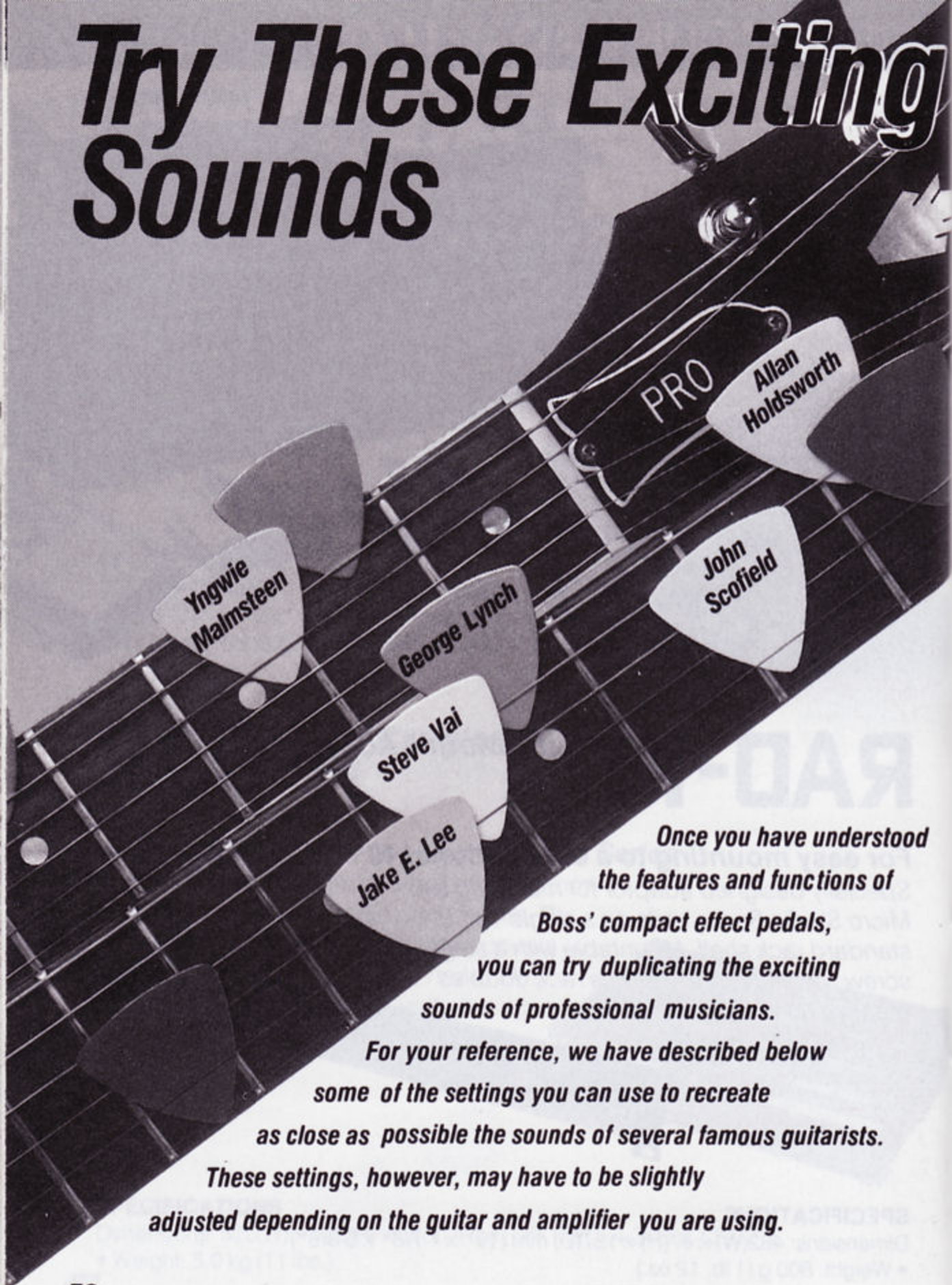


SPECIFICATIONS

Dimensions: 482(W) × 47(H) × 137(D) mm (19" × 1-7/8" × 5-3/8")
• Weight: 800 g (1 lb. 12 oz.)



Try These Exciting Sounds



Once you have understood the features and functions of Boss' compact effect pedals, you can try duplicating the exciting sounds of professional musicians.

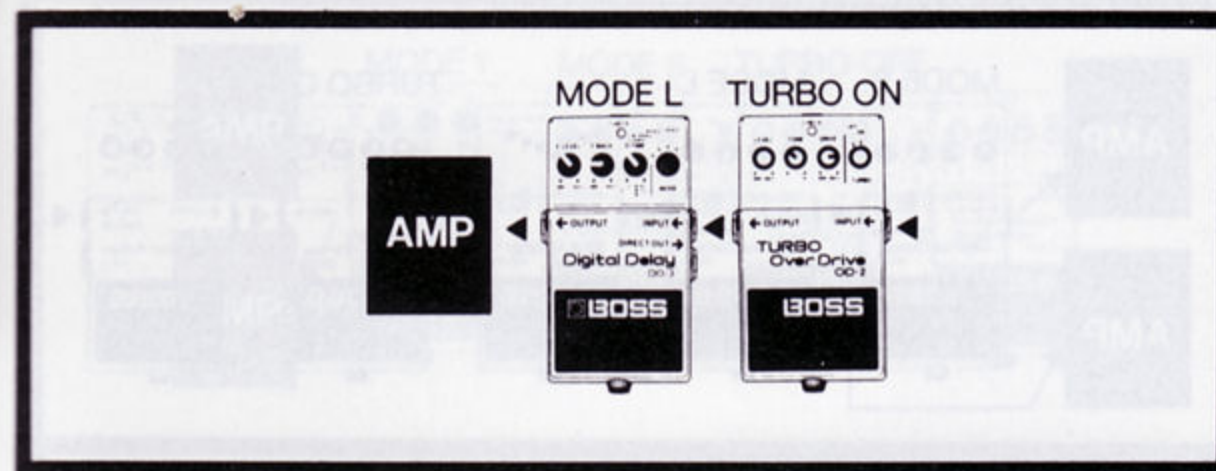
For your reference, we have described below some of the settings you can use to recreate

as close as possible the sounds of several famous guitarists.

These settings, however, may have to be slightly adjusted depending on the guitar and amplifier you are using.

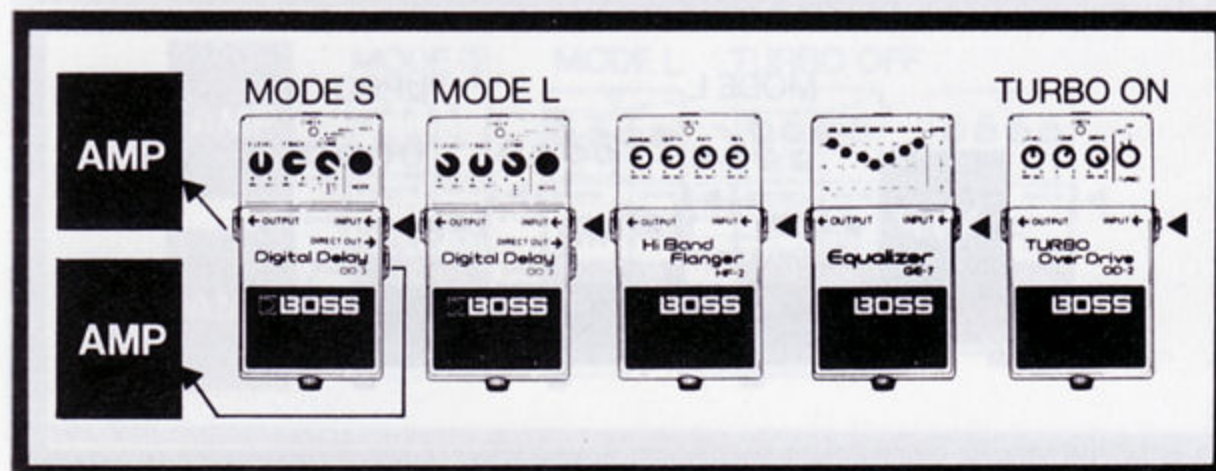
Yngwie Malmsteen "You Don't Remember"

Set the overdrive at a higher setting and turn the turbo on. The trick behind the Yngwie Malmsteen sound is tuning a half-tone lower and lighter picking. Although Malmsteen uses rear pickups for solo parts, half-tone or center pickups make reproduction of delicate nuances easier.



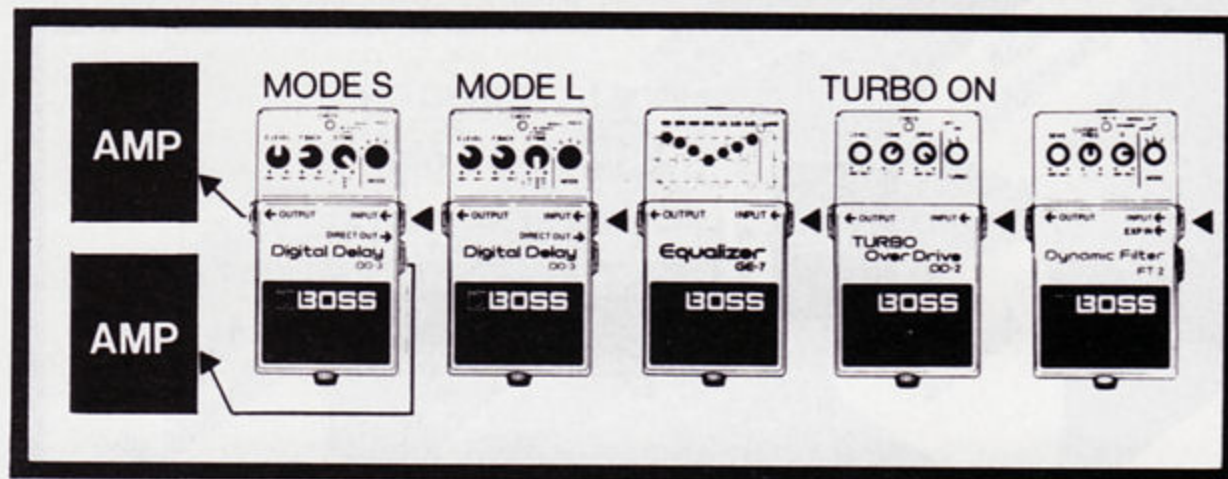
George Lynch "Unchain the Night"

After passing the signal through an OD-2 Turbo Over Drive, equalize to emphasize the high and low bands. Use the DD-3 Digital Delay at the end, with the delay time set shorter to add richness to the sound, and use stereo outputs. The DD-3 and the HF-2 Hi Band Flanger should be turned on at certain parts. Tight picking is also recommended.



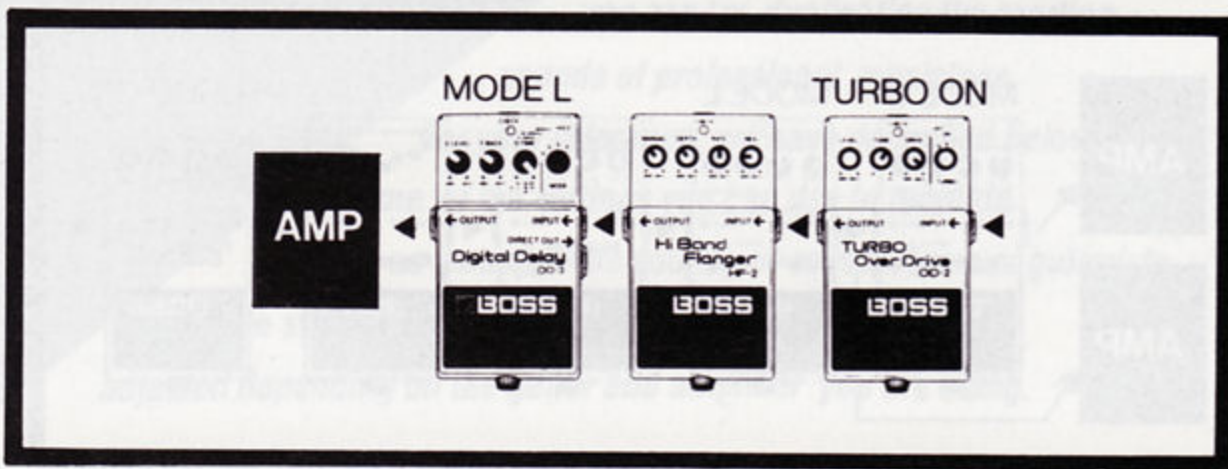
Steve Vai "Yankee Rose"

Use the setting shown below if delicate nuances are to take priority. But if you feel the noise is a little excessive, switch the order of the FT-2 and OD-2, or add an NF-1 Noise Gate before the DD-3 long digital delay. The overdrive effects should be as shocking as possible. Partial activation of the FT-2 and DD-3 is another recommendation.



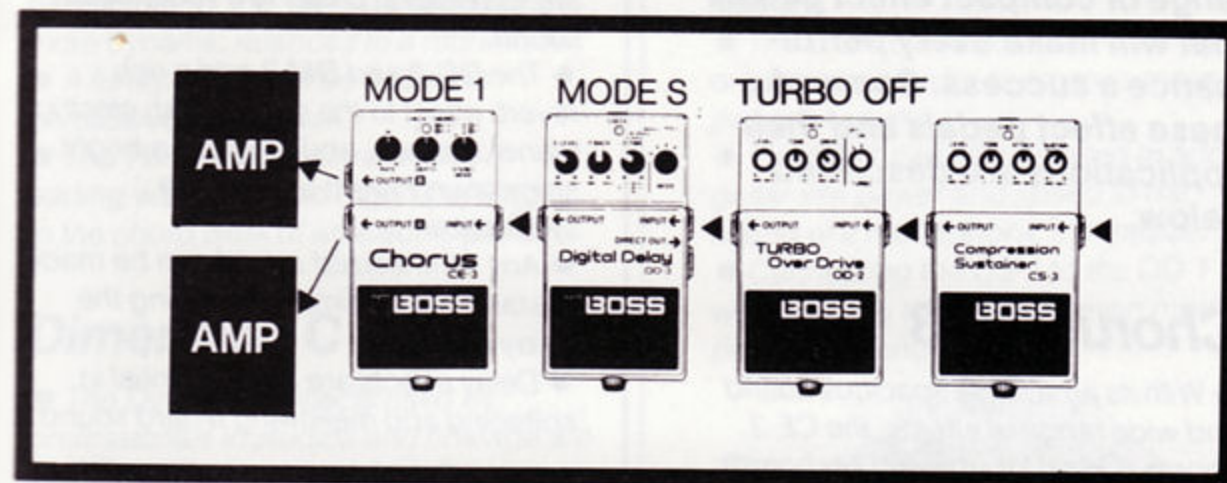
Jake E. Lee "Bark at the Moon"

A typical heavy metal setting. Use the OD-2 at maximum drive and turn the turbo on. For solos, the HF-2 Hi Band Flanger is ideal for creating distinctive tone colors. Pick fast and hard and don't forget to tune a half-tone lower.



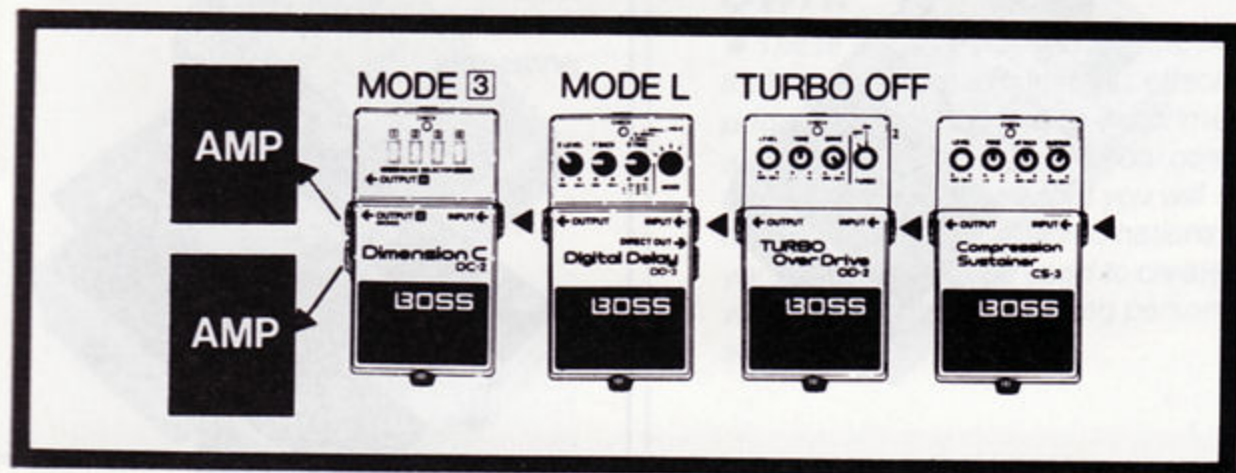
John Scofield "Rule of Thumb"

The SD-1 Super Over Drive may be used in place of the OD-2. Scofield uses less overdrive in the first half of the tune and gradually increases it as he enters the second half. An effective technique to accomplish this is by controlling the guitar's volume. The CE-3 should be set to Mode I and stereo.



Allan Holdsworth "Tokyo Dream"

As Holdsworth uses the OD-2 with turbo off, the SD-1 Super Over Drive may alternately be used. Connect a volume pedal between the OD-2 and DD-3 for added dynamics. Spacious and richer effects achieved with a DC-2 will also be effective. The key to this type of playing lies in accurate pulling and hammering combined with lighter picking.



Guide to Using Boss Effect

For keyboard players who refuse to accept any limits on the sounds they can create, Boss has developed a wide range of compact effect pedals that will make every performance a success. Some of these effect pedals and their applications are described below.

Chorus CE-3

- With its amazingly spacious sound and wide range of effects, the CE-3 chorus is ideal for use with keyboards.
- By connecting the CE-3 to a combo organ, a deep, bassy sound can be produced.
- The CE-3 can also add accents to music when it is used to play chords on an electric piano.
- The CE-3 provides greater depth and richness to any synthesizer sound.



Digital Delay DD-3 and Delay DM-3

- Together with chorus pedals, delays are essential in creating a wide, deep sound.
- The DD-3 and DM-3 add a rich reverb effect to the sound of an electric piano or organ, and produce a bright, shiny sound when used with a synthesizer.
- Any synthesized sound can be made to stand out by simply repeating the delay effect.
- Delay effects are also essential in softening and mellowing a hard sound.

Phaser PH-2

- Phasers were originally developed to electrically produce the sound of a rotary speaker. They are ideal for use with electric pianos and electronic organs.
- The PH-2 can be used to swell a monotonous solo phrase.
- The PH-2 can also be used to add a tremolo effect which is produced by wind instruments to monotonous solo phrases.



Pedals with Keyboards

T Wah TW-1

- Wah effect pedals are commonly used by keyboard players.
- When connected to a clavinet or electric piano, the TW-1 can add richer, more dynamic nuances to a monotone.
- A funky effect can be added to percussive chord work.
- The TW-1 is also very effective in adding wah effects to organ backing or to the chord work of an electric piano.

Dimension C DC-2

- The Dimension effects used by professionals in studios and onstage are widespread today, and this effect is considered an absolute must for keyboard players.
- An effect similar to the chorus sound, Dimension C adds plenty of depth, richness and width to the conventional chorus effect. And the wavering of the sound you experience with conventional chorus effects is also eliminated.



Over Drive OD-1

- Recently, distortion effect pedals such as overdrives have been used to produce guitar-like overdriven, or hard sounds.
- The OD-1 can be used to distort an organ tone in order to create a more powerful sound.
- The OD-1 can also be used to add guitar-like power and speed to the sound of a monophonic synthesizer.
- Connecting the DS-1 to the OD-1 will allow you to create an even more powerful sound.



Experiment on your own!

- These are only some of the effects that can be created with Boss effect pedals, but you are free to experiment with new keyboard/effect pedal combinations. We are sure that you will discover a number of combinations on your own that can be used to create a whole new range of exciting personal sounds.

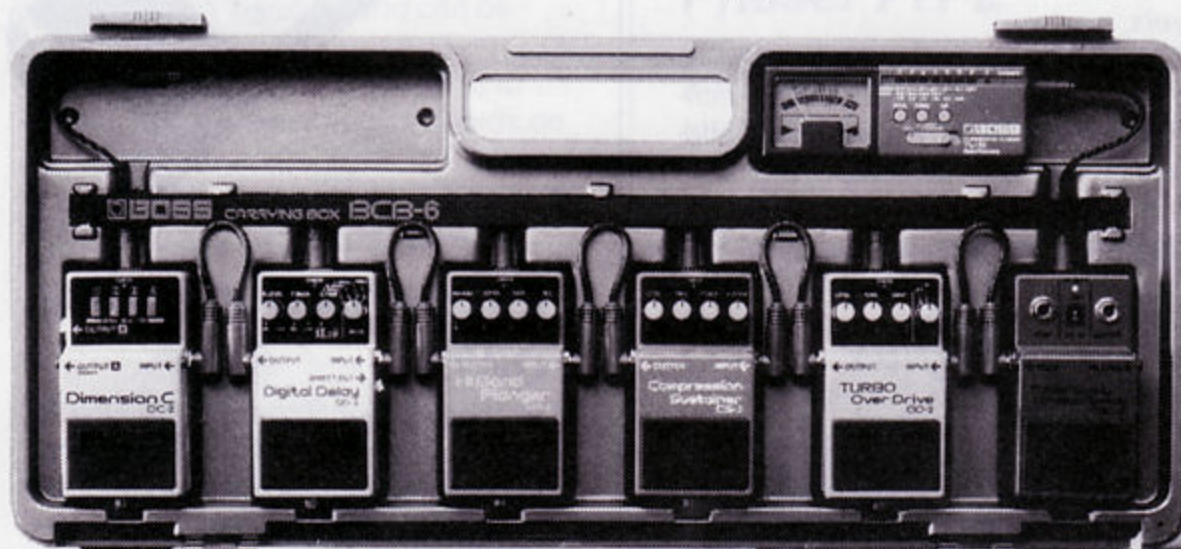
CARRYING BOX

BCB-6 Carrying Box

The handsome BCB-6 Carrying Box can store up to 6 compact effect pedals for easy portability. When the lid is opened, the BCB-6 can serve as a highly-functional effect pedal board, thus radically reducing the time necessary for setting up the effect pedals. The BCB-6 is constructed of heavy-duty molded resin for rigidity and light weight.

Using the BCB-6 as a Carrying Box

- Stores up to 6 standard, compact-size effect pedals (not limited to Boss effect pedals).
- Heavy-duty molded resin case for lightweight (2.0kg) carrying ease and superior rigidity, specially designed to ensure complete protection of the effect pedals inside.
- Clean, modern external design presents handsome appearance while on the road.
- Compact, easy-to-carry dimensions—633(W) × 84(H) × 280(D) mm.



SPECIFICATIONS

Effect accommodation: 6 units

- Dimensions: 633(W) × 84(H) × 280(D) mm (24.9" × 3.9" × 11.0")
- Weight: 2.0 kg (3.5 lbs.)
- Accessories: Connection cords

POWER SUPPLY & MASTER SWITCH

PSM-5

Power Supply & Master Switch



Using the BCB-6 as an Effect Pedal Board

- Removing the lid turns the BCB-6 into an effect pedal board that's already set up for any kind of performance.
- Tedious effect pedal set-up is eliminated, as is the messy tangle of wires around your feet during a performance.
- A one-touch effect pedal mounting system requires no tools or remodeling of the effect pedals themselves.
- The effect pedals can be easily removed and replaced with others according to the type of music to be played.
- Connection cords provided for convenient connection of all effect pedals.

Upgrading the System with the PSM-5

The PSM-5 Power Supply & Master Switch provides the BCB-6 with a comprehensive effect pedal board function.

- The PSM-5 supplies power for up to five 9V effect pedals.
- Simply pressing the pedal permits switching between the effect and normal modes of two or more effect pedals.
- Since the PSM-5 is the same size as a compact effect pedal, it can be stored in the BCB-6 Carrying Box.
- Standard accessories include an AC adaptor and a parallel DC cord for 7 units.

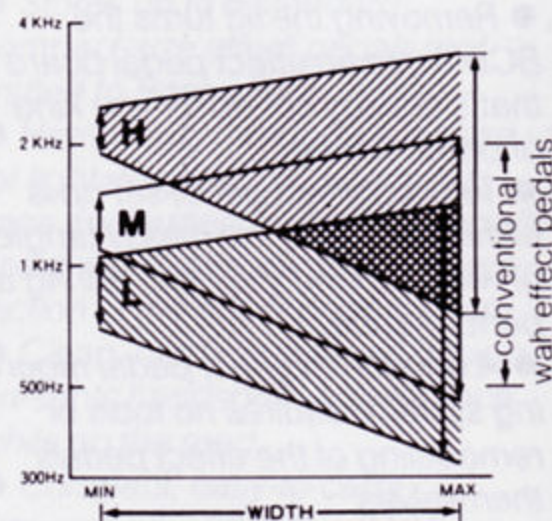
ROCKER WAH

PW-1 *Rocker Wah* (with soft case)

The PW-1 Rocker Wah is a revolutionary wah effect pedal that can produce optimum wah effects for every type of electronic musical instrument, from guitars to keyboards and bass guitars. By incorporating Boss' original electronic volume control, the PW-1 completely eliminates the scratchiness found in conventional pedal volume controls. As a result, the PW-1 Rocker Wah can create attractive sounds for long periods of time.

- With a Width control for adjusting the width of the wah effect and a Range control for setting the frequency at any of three frequency ranges—High, Medium and Low—the PW-1 can generate ideal wah effects for any type of musical instrument.

Fig. Range Selection and Width Control



SPECIFICATIONS

Power: DC 3V (UM-2 x 2), AC Adaptor (ACA Adaptor) • Current draw: DC 3V, 50mA
 • Input impedance: 470k Ω • Output load impedance: Over 10k Ω • Dimensions:
 110(W) x 65(H) x 320(D) mm (4.3" x 2.6" x 12.6") • Weight: 1.3 kg (2.86 lbs.)

67 • Accessory: Vinyl Bag.

VOLUME PEDAL

FV-50L/50H *Volume Pedal*

Priority on sound quality lets you select between 2 models depending on input impedance level.

- When the FV-50L/50H comes before effect units for guitars, the FV-50H (high impedance) is your best choice. While minimizing high frequency rolloff, this volume pedal gives precise control over your volume and keeps all that great guitar sound.
- When connecting a volume pedal after the effect pedals, or for keyboards, the FV-50L (low impedance) pedal is recommended. it does not pick up external noise

and sound quality will not deteriorate even when used with long cords.

- A built-in Minimum Volume control, made famous in the FV series, facilitates control for any desired minimum volume. This simplifies setting a volume difference between lead and backing playing.
- 2-inputs/2-outputs enable direct control for stereo keyboards and 2-output effect units.
- Tuner Output jack allows tuning without generating any sound during live performances, with the pedal set to minimum volume.



SPECIFICATIONS

Jacks: Input 1, Input 2, Output 1, Output 2, Tuner Out • Controls: Main Volume (Pedal), Minimum Volume • Dimensions: 86(W) x 54(H) x 200(D)mm (3³/₈" x 2¹/₈" x 7⁷/₈") • Weight: 400 g (14 oz)

VOLUME PEDAL

FV-200 Keyboard Volume (with soft case)

Stereo-type volume pedal specially designed for use with keyboards.

- Two separate stereo channels make the FV-200 ideal for use with stereo keyboards and for playing two keyboards simultaneously.
- Minimum Volume control is freely adjustable and also enables adjustment of the pedal control range.
- Built-in Center Point Setting Spring allows a normal volume level to be set so that emphasis can be added by just pressing the pedal.
- Lightweight rigid aluminum diecast body.



SPECIFICATIONS

Dimensions: 110(W)×65(H)×324(D) mm (4.3"×2.6"×12.8") • Weight: 1 kg (2.2 lbs.)

FV-100 Guitar Volume (with soft case)

Featuring a Minimum Volume Control

- The FV-100 Guitar Volume Pedal is specially designed for use with a guitar,
- The Minimum Volume control adjusts the minimum volume level when the pedal returns to the normal position and enables adjustment of the volume range.
- Lightweight rigid aluminum diecast body.



SPECIFICATIONS

69 Dimensions: 110(W)×65(H)×324(D) mm (4.3"×2.6"×12.8") • Weight: 1 kg (2.2 lbs.)

DR. RHYTHM

DR-220A/E Dr. Rhythm

Newest rhythm machines featuring built-in digital sound sources.

- The DR-220A features 11 different acoustic drum sounds produced by digital sources, while the DR-220E is the same, except that the drum sounds are electronic drum sounds. Either model delivers quality digital sounds.
- The DR-220A/E is available with 64 rhythm patterns (32 preset and 32 programmable), making it easy to play a maximum of 256 rhythm pattern measures continuously.
- Rhythm patterns can be

programmed by either step writing or tap (real-time) writing.

- The built-in Trigger In/Out jacks allow the DR-220A/E to be simply synchronized with a trigger signal from the other rhythm machines or another Dr. Rhythm unit.

DR-220A	DR-220E
Bass Drum	Electronic Bass Drum
Snare Drum	Electronic Snare Drum
Low Tom	Electronic Low Tom
Mid Tom	Electronic Mid Tom
Hi Tom	Electronic Hi Tom
Rim Shot	Cow Bell
Hand Clap	Slap
Open Hi-Hat	Open Hi-Hat
Closed Hi-Hat	Closed Hi-Hat
Crash Cymbal	China Cymbal
Ride Cymbal	Cup



SPECIFICATIONS

- Power Source: Batteries (UM-3 × 4), AC Adaptor (PSA series) • Memory: 32 Preset Rhythm Patterns, 32 Programmable Rhythm Patterns, 8 Songs (each 128 measures long) • Pattern Writing Methods: Step Write, Tap Write • Tempo: 40 to 250 beats per minute • Jacks: Output (1/4" Phone jack), Headphones (Mini Phone jack), Rim Shot Trigger Out (Mini Phone jack), Trigger In (Mini Phone jack), 9V DC In • Dimensions: 239(W) × 75(D) × 30(H) mm (9-7/16" × 2-15/16" × 1-3/16") • Weight (with batteries): 350 g (12 oz.)

DB-66 *Dr. Beat* (with soft case)

Practice rhythms with the eye and ear using the Tap key.

- Equipped with an accurate quartz electronic metronome, correct tempo setting is immediate with the built-in display. Rhythm tempo and beat are monitored through a built-in speaker and 2 LEDs.
- Tap the Tap key in time to the music to get an instantaneous readout of the music's tempo.
- Sets beat at 0, 1, 2, 3, 4, 5 or 6 beats per measure with a chime at the first beat.

- With 4 basic rhythm units, you can practice just about any rhythm—from syncopation to 8-beat to complex time signatures by making use of the individual level controls.
- The tempo can be set exactly at any point between 35 to 250 quarter note beats per minute with the Up/Down switch.
- Reference signal set at A4 (440Hz) to allow instrument tuning.



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (BOSS PSA series) • Current draw: 9V DC, 9mA (in the stop mode) • Tempo: 35 to 250 beats per minute • Tempo accuracy: $\pm 0.15\%$ • Beats: 0, 1, 2, 3, 4, 5, 6 • Tuning note: A (440Hz, ± 0.2 cents) • Rhythm indicators: Audio beep and dual LEDs • Controls: Rhythm volume $\times 4$ (J, J., J., J.), Beat level, Total volume • Switches: Beat, Down, Up, Start/Stop (also functions as the Tap switch), Mode • Jacks: Headphones (mini stereo), AC adapter • Dimensions: 170(W) $\times$ 33(H) $\times$ 96(D)mm (6 $\frac{11}{16}$ " $\times$ 1 $\frac{5}{16}$ " $\times$ 3 $\frac{3}{4}$ ") • Weight: 320 g (11 oz) without battery • Accessory: Soft case

DB-11 *Music Conductor*

The DB-11 Music Conductor contains the 4 essential functions for performing and practising—metronome, tap, tuner and stopwatch—all in a compact package which slips into your pocket. This handy unit is available in 4 attractive colors. No musician should be without one!

- **Metronome Mode:** A tempo can be set anywhere between 35 and 250 quarter-note beats per minute, with beat settable from 0—6 beats per measure. 4 types of basic beats are provided.
- **Tap Mode:** Tap the key in time with the music's tempo, and the tempo will be displayed on a real-time basis. Then by selecting the Metronome mode, the metronome function can be initiated at the tempo displayed and the original beat.

- **Tuner Mode:** A standard note can be generated in semitone steps over the range of C4 to B4 for additional convenience when tuning. 8 stage pitches can also be set between 438 and 445Hz in 1Hz steps.
- **Stopwatch Mode:** You can clock up to 59 minutes, 59 seconds and 99/100 in 1/100 second intervals.



SPECIFICATIONS

Power: DC 6V, CR2032 manganese-lithium battery $\times 2$ • Battery life: 150 hours (continuously used in the Metronome Mode at the tempo of 100 beats per minute) • Metronome mode: Tempo (35 to 250 beats per minute), beat (0, 1, 2, 3, 4, 5, 6), rhythm (J, J., J., J.), accuracy ($\pm 0.1\%$) • Tap mode: Tempo (35 to 250 beats per minute with high/low indication), Beat (0, 1, 2, 3, 4, 5, 6) • Tuner mode: Note range (C4 to B4, chromatic), standard pitch (438 to 445Hz, 1Hz steps), accuracy (Within ± 1 cent, 0.06%) • Stop-watch mode: Time range (0 to 59 minutes 59.99 seconds) • Display: Liquid crystal display • Tempo indicator: LED $\times 2$ • Speaker: Piezo electric speaker • Switch: Power • Buttons: Mode, select, up, down, reset, start/stop (tap) • Jack: Headphones (monaural mini jack) • Dimensions: 49(W) $\times$ 18(H) $\times$ 84(D) mm (1-15/16" $\times$ 1-1/16" $\times$ 3-5/16") • Weight: 51 g (2 oz.)

HEADPHONE AMP

HA-5 Headphone Amp (with belt clip)

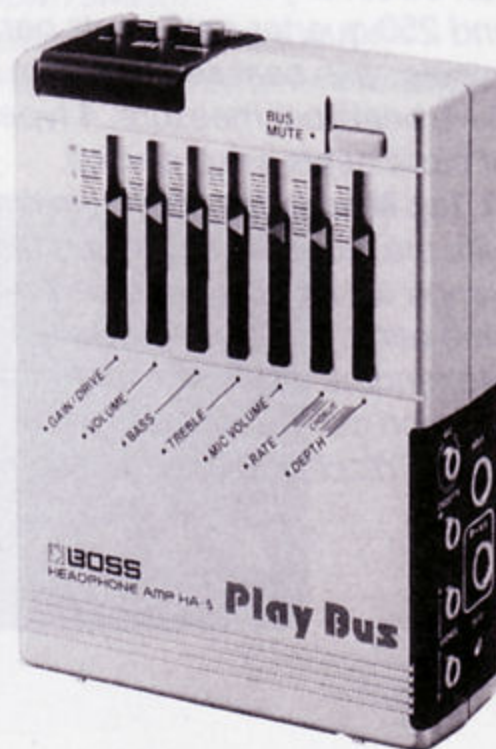
The HA-5 Headphone Amp incorporates a wide range of advanced functions into a single compact unit. The battery-powered HA-5 lets you play musical instruments anytime, anywhere, and although the HA-5 produces as dynamic a sound as a large-size amplifier, it allows you to play at significantly high volumes, even late at night, without bothering the neighbors. Incorporating three different effect circuits—over-drive, stereo chorus and stereo short delay—a single HA-5 unit permits the user to create an extensive array of sounds. By connecting two or more HA-5 units together, several musicians can play together. In addition, any electronic musical instrument can be connected to the HA-5, making it ideal for practicing playing techniques at home as well as for tuning prior to live performances.

SPECIFICATIONS

Power: DC9V (UM-3 x 6), AC Adaptor (PSA Adaptor) • Input impedance: Input/470k Ω , MIC/2.2k Ω , Cassette: 47k Ω , Phones/8 Ω ~ 300 Ω , P-Bus in/out impedance 10k Ω • Dimensions: 90(W)x120(H)x42(D) mm (3.5"x4.7"x1.7") • Weight: 350 g (0.77 lbs.)

Incorporates 3 highly-sophisticated effect circuits.

Incorporating the same effect circuits as the Boss Compact Series, the HA-5 can create a remarkable number of effects including over-drive, stereo chorus and stereo short delay. The built-in separate Bass and Treble controls allow you to enjoy an amazingly wide range of sounds.



Allows playing along with a rhythm machine or with tape-recorded music.

By connecting the HA-5 to a rhythm machine or tape recorder, the user can match an instrument to the accompaniment of a particular rhythm or piece of recorded music. The HA-5 is thus effective for practicing and copying songs and playing techniques.

Fatigue-free playing even after long hours of use.

Because the HA-5 adds a wide stereo effect to the sound of a musical instrument, the sound image will not be concentrated at a single "point" inside the musician's head. Thus, a musician can comfortably use the HA-5 even for long periods of time.

Provides the versatility of a headphone jam session.

Two HA-5 units can be connected together by means of a single guitar cord. If one person plays a guitar and the other plays a keyboard, both musicians can play while listening to the other person's playing. In addition, three or more HA-5 units can be easily connected together by means of the optional J-5 multiple jack, allowing an entire band to jam together.

RH-11M Stereo Headphones with Built-In Microphone for musicians who wish to sing.

Exceptionally light in weight, the optional RH-11M Headphones with a Built-in Microphone allows a musician to sing while playing a musical instrument.



RH-11M Stereo Headphones with Built-In Microphone

SPECIFICATIONS

Headphones: Type: Dynamic open air
Speaker: Dynamic 12 μ polyester-film
• Impedance: 50 Ω • Sensitivity: 101dB/mW
• Power handling capacity: 100mW (for one unit) • Frequency response: 18Hz to 22kHz • Microphone: Type: Dynamic, Directivity: Differential, bi-directional
• Frequency response: 50Hz to 20kHz (at close range) • Impedance: 160 Ω
• Assembly Weight: 2.4 oz. without cord, Total weight: 3.2 oz. with cord and 2 plugs

CHROMATIC TUNER

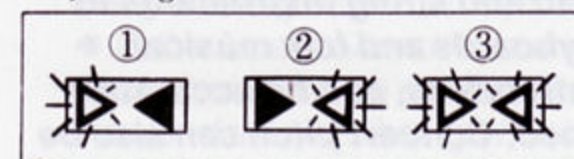
TU-12 Chromatic Tuner (with soft case)

Unlike conventional tuners, the TU-12 Chromatic Tuner fully automates tuning adjustment through a revolutionary digital processing system, thus eliminating adjustment of the switch for each note to be tuned. When set in the chromatic mode, tuning can be done by simply playing the instrument. The TU-12 is also equipped with two triangular LEDs that light up when a perfect pitch is achieved in order to speed up the tuning process. In addition, the Pitch button permits the TU-12 to be set at different concert pitches between 440Hz and 445Hz (in 1Hz step). The sweep meter has indications for the range between -50 cent and +50 cent. The world's best-selling tuner, the compact and high-performance TU-12 is ideal for use with all types of guitars, including bass guitars.

- The world's TU-12 automatically reads and displays the note being played and its pitch.
- In addition to the chromatic tuning mode which permits fully automatic tuning, the TU-12 has a guitar mode which is convenient for tuning after replacing guitar strings.
- The highly-sensitive built-in condenser microphone makes the TU-12 ideal for acoustic instruments.

- Input and output jacks make it possible to connect all types of electric guitars, including bass guitars, to the unit for quick tuning during live performances.
- Two triangular-shaped LEDs provide at-a-glance indication of which direction the musician must adjust the instrument in order to become in tune. Both LEDs light up when the instrument is in perfect tune, facilitating tuning even in dark locations or from a distance.

- The TU-12 incorporates a sweep meter that is specially designed to facilitate optimum tuning.
- The TU-12 also incorporates a battery indicator which indicates the amount of battery power remaining.
- Compact, lightweight design: Only 170g.



1. Lower pitch
2. Higher pitch
3. Perfect pitch



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: 7mA (LED off), 20mA max. • Tuning range: C1-B5 • Accuracy: ± 1 cent • Oscillator: Quartz (3.579545MHz) • Built-in microphone: Electret condenser microphone • Dimensions: 145(W)×35(H)×53(D) mm (5.8"×1.5"×2.1") • Weight: 170 g (0.37 lbs.)

CHROMATIC TUNER

TU-12H Chromatic Tuner (with soft case)

The TU-12H is an enhanced version of the TU-12, the world's best-selling chromatic tuner. The TU-12H features the TU-12's easy-to-use automatic functions and superior performance, plus an expanded tuning range of C₁ to B₆. With the TU-12H, instruments of all frequencies, from wind and string instruments to keyboards and folk musical instruments, can be accurately tuned. Concert pitch can also be automatically adjusted within 440 and 445Hz in 1Hz step (with a -50—+50 cent variable pitch range on the sweep meter).

- Fully-automatic read-in and display of the note being played and its pitch eliminates the need for adjusting a switch, thus providing

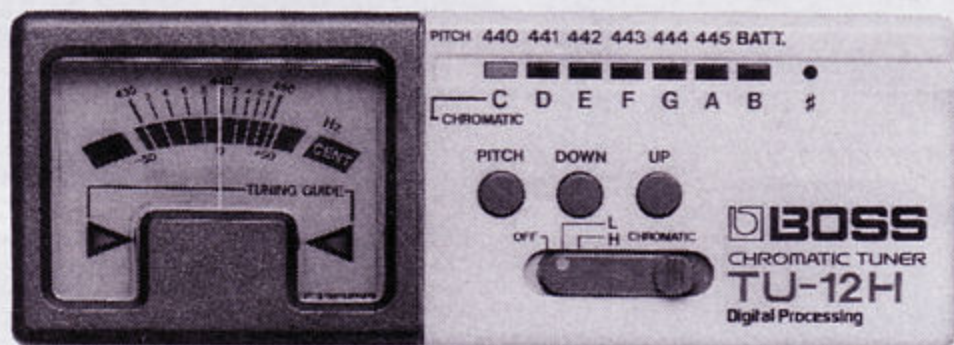
extra convenience to players even when using both hands to play.

- Covering a frequency range from that of a B^b bass tuba to a B^b clarinet or flute, the TU-12H is ideal for eliminating instability in both high notes and long tones.

- With string instruments, the TU-12H is effective not only in the tuning of violins, violas and cellos, but also as an aid in mastering the correct fingering positions, i.e. when learning scales.

- The TU-12H features a compact, lightweight design for easy portability.

- The sweep meter is designed to ensure optimum tuning. Together with a series of LEDs, this sweep meter ensures more precise tuning.



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (PSA Adaptor) • Current draw: DC 9V, 7mA (LED off) to 20mA (max) • Tuning range: C₁ to B₆ • Pitch accuracy: ± 1 cent • Standard oscillator: Quartz (3.579545MHz) • Concert Pitch: 440Hz to 445Hz, 1Hz step • Dimensions: 145(W)×35(H)×53(D) mm (5.8"×1.5"×2.1") • Weight: 170 g (0.37 lbs.)

CHROMATIC TUNER

TU-100 Chromatic Tuner

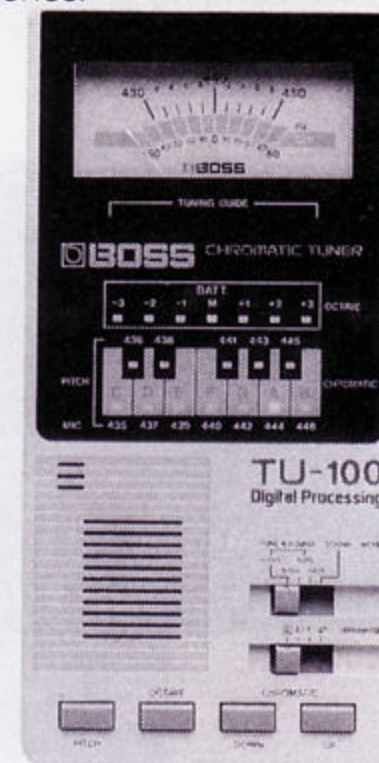
The TU-100 fully-automatic Chromatic Tuner incorporates a built-in computer and features a 7-octave tuning range. This means you can tune just about any instrument with it. The TU-100's 3 tuning modes include such features as: a note being chromatically selectable over 4 octaves, a very sensitive sweep meter and tuning guide LEDs. The TU-100 has other advanced features including a transpose function for transposed instruments, octave indication, 3-level volume selector, and even more. The TU-100's "100" stands for "100% fully tuned" and "100% suitable for any instrument."

- 3 different tuning modes—Tune & Sound Manual Mode, Tune & Sound Auto Mode, and Sound Mode. In the Tune & Sound Auto Mode, you just have to play your instrument. The TU-100 will automatically detect the note and the pitch of the sound. Just by

observing the sweep meter and tuning guide LEDs, you can tune up perfectly. Ideal for quick, accurate tuning and also for practicing scales.

- In the Sound Mode, you can tune while listening to a standard note through the TU-100's built-in speaker, just as you would when using a tuning fork or pitch pipe.

- In the Tune & Sound Auto and Manual modes, you can listen to the standard note through headphones.



SPECIFICATIONS

Power: 9V Battery, AC Adaptor (BOSS PSA series) • Current draw: DC 9V, 30mA (max, in the tuning mode) • Tuning range: 7 octaves (C₁ = 32.7Hz to B₇ = 3951.1Hz) • Sound range: C₂ = 65.4Hz to B₃ = 987.7Hz • Standard pitch: 435 to 446Hz, 1Hz steps • Volume selection: 3 ranges • Accuracy: ± 1 cent • Jacks: Input, output, headphones, AC Adaptor • Dimensions: 86(W)×41(H)×167(D) mm (3-3/8"×1-5/8"×6-9/16") • Weight: 230 g (8 oz.)

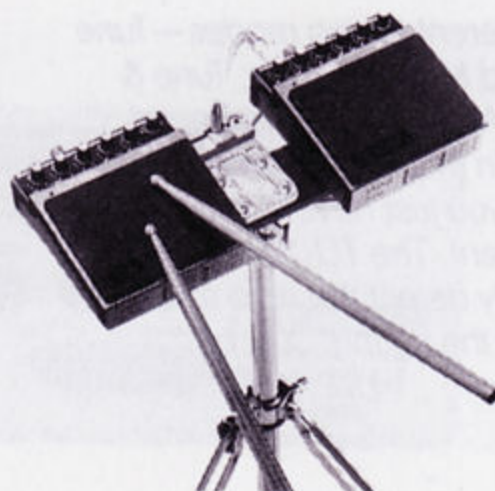
DRP-I/II/III *Dr. Pad*

Convenient electronic percussion for any player. Just tap for great digital sounds.

- Every model provides six different newest digital sound sources (see Table below).
- Sensitive pad can be dynamically controlled. Simply vary tapping force.
- Pitch Sensitivity control adjusts the sound source's pitch by varying the tapping force. Sweep Time and Range controls for up/down pitch-bending adjustments.

- The Mix In jack facilitates combining two or three units into an integrated pad system, while with the Trigger In jack, Dr. Pad can also serve as an external sound source for a rhythm machine.

	DRP-I	DRP-II	DRP-III
1	Snare Drum 1	Bass Drum 1	Smashing Glass
2	Snare Drum 2	Bass Drum 2	Cowbell
3	Tambourine	E. Tom	Timbale
4	Hand Clap	Steel Drum	Scratch
5	Cymbal	Gong S	Quijada
6	Timpani	Star Chime	Gong L



SPECIFICATIONS

- Power: 9V Battery, AC Adaptor (PSA-series) • Controls: Pitch, Pitch Sens, Decay, Sweep Range, Sweep Time, Minimum Sens, Level • Switch: Sound Select (1 to 6)
- Jacks: Mix In, Trigger In, Output, 9V DC In, 9V DC Out • Dimensions: 152(W) x 60(H) x 168(D) mm (6" x 2-3/8" x 6-5/8") • Weight: 1.1 kg (2 lbs. 7 oz.)

MPD-4 *MIDI Pad*

Hitting the MPD-4 lets you activate any MIDI-controlled sound sources, ranging from synthesizers and samplers to rhythm machines. With the MIDI Pad, the full potential of MIDI instruments can now be enjoyed not only by keyboard players but also by drummers, vocalists and everybody else.

- Three built-in External Pad jacks permit expansion into a MIDI pad system consisting of up to 4 pads, when a BP-1 pad controller is con-

nected. Adding the FS-5L/5U Foot Switch lets each pad select a specific tone color, enabling up to 8 pads to be played simultaneously.

- Hi-Hat simulation is also possible by linking the FS-5U (unlatch) foot switch.
- Selectable MIDI channels between 1 and 16.
- Dynamics control capability.
- When a MIDI synthesizer is used as a sound source, Gate Time can be controlled by the hitting strength used on the MPD-4.



SPECIFICATIONS

- Power: 9V Battery, AC Adaptor (PSA series) • Controls: Value, Pad Sensitivity
- Switches: Sound Set, Mode (8-line DIP Switch) • LED's: Sound Set, Power • Jacks: External Pad (1 to 3), Foot Switch, 9V DC In • MIDI Connectors: In, Out
- Dimensions: 152(W) x 60(H) x 168(D) mm (6" x 2-3/8" x 6-5/8")
- Weight: 1.1 kg (2 lbs. 7 oz.)

MICRO MONITOR AMP

MA-12 *Micro Monitor Amp*

• **The MA-12's uncolored, natural sound makes it perfectly applicable for monitoring instruments as well as for playback of audio sources.**

• High and Low Tone controls to suit your preference.

• Equipped with three LINE-IN

jacks that accept audio source inputs, the MA-12 enables computer music and MTR monitoring as well as mixing sources like playing keyboards along with recorded tapes. Active Tone controls guarantee high sound quality for any application.



SPECIFICATIONS

Output: 10W • Speaker: 4 inch full range • Input: Standard Jack (- 10dBm) x 3

• Input impedance: Over 50k Ω • Controls: input volume x 1, low boost x 1, high

boost x 1 • Consumption: 16W (117V), 28W (220V, 240V) • Dimensions:

81 132(W) x 218(H) x 165(D) mm (5-3/16" x 8-9/16" x 6-1/2") • Weight: 2.3 kg (5 lbs.)

MICRO MONITOR AMP

MA-15A *Micro Monitor Amp*

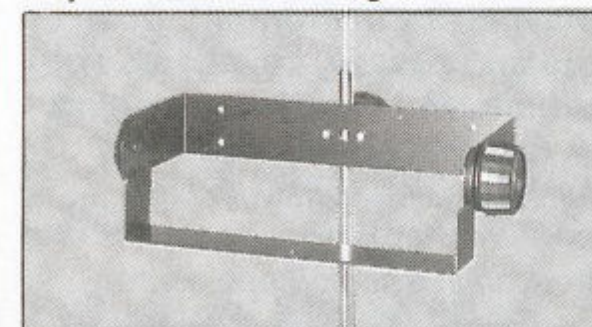
The easy-to-operate MA-15A Micro Monitor Amplifier can be used as a practice amplifier, stage monitor and more. It is compact, yet produces 15W of output power, and incorporates a full-range 12cm speaker that produces a clear, powerful sound. A headphone jack also lets you enjoy practicing without disturbing others.

• High and Low gain inputs allow the MA-15A to be connected to a wide array of instruments, including guitars, keyboards, microphones, etc.

• The MA-15A can be connected to a tape recorder or FM tuner by means of the Auxiliary input, per-

mitting you to play an instrument while also operating a tape recorder or tuner, thus facilitating the practice of playing techniques.

• An optional MSA-100 Speaker Adaptor allows the MA-15A to be attached to either a music stand, microphone stand or wall/ceiling for adjustment of the angle of the unit.



MSA-100



SPECIFICATIONS

Power: AC Powered • Output: 15W (RMS) • Power consumption: 23W • Speaker:

5 inch full range • Dimensions: 300(W) x 167(H) x 162(D) mm (12" x 6.7" x 6.5")

• Weight: 3.1 kg (7.5 lbs.) • Accessory: Metal Adaptor for Microphone stand.

Pages 83-84 missing

MONITOR SPEAKER

MS-100A

Monitor Speaker

The easy-to-use MS-100A Monitor Speaker incorporates into a compact body a wide range of innovations that help to improve the monitoring effect, and can handle an exceptionally high 100W of input power. As a result, the MS-100A can provide a musician with excellent support while playing any instrument, from guitars, basses, keyboards and drums, and even while singing.

- Two newly developed 10cm full-range speakers with high performance magnets inside and housed in a sealed enclosure permit the MS-100A to handle a full

100W of input power for a significantly more powerful sound.

- A 4700Ω impedance potentiometer and attenuation on the front panel permit simple adjustment of the volume.
- An optional MSA-100 Speaker Adapter allows the MS-100A to be mounted on a microphone stand or on a wall/ceiling.
- Parallel connection extension ports on the back panel allow a number of MS-100A units to be connected together, thus permitting the monitoring system to be expanded according to the size of the stage and the composition of the band.



SPECIFICATIONS

Frequency response: 100Hz - 10kHz • Power handling capacity: 100W • Sensitivity: 90dB/1m • 100W - 100W - 100W • Impedance: 4700Ω • Dimensions: 200mm (W) x 100mm (H) x 100mm (D) • Weight: 1.5kg • Accessories: None

STEREO MIXER

BX-600

8-Channel Stereo Mixer

All the sophisticated functions of a full-size 8-channel mixer in one compact package.

All the extensive mixing functions usually encountered in large 8-channel mixers are here in one compact unit. Channel gain, separate levelable controls, select spectrum, pan pot, stereo volume control, as well as a headphone jack for monitoring - all these and other functions are incorporated in this outstanding mixer. All controls are simply laid out, letting anyone easily utilize advanced mixing techniques.



SPECIFICATIONS

- Channels: 8 (4 x 1/2" Stereo, 4 x 1/4" Mono)
- Channel controls: 8 (Gain, Level, Pan, Select, Spectrum)
- Power: 100W (4 x 1/2" Stereo, 4 x 1/4" Mono)
- Dimensions: 200mm (W) x 100mm (H) x 100mm (D)
- Weight: 1.5kg

BX-600

8-Channel Stereo Mixer

Compact, multi-function, high-performance 8-channel mixer. A full-size 8-channel mixer of compact dimensions but advanced functions, the BX-600 features controls for channel gain, effect select, volume, effect volume, pan pot and other advanced mixing functions. Its wide variable gain range of up to 100dB for line inputs makes it easy to use the BX-600 as a full-size 8-channel mixer. Use of the volume pots turn the BX-600 into an 8-channel mixer. LED indicator lamp complements its superb sound quality.



SPECIFICATIONS

- Channels: 8 (4 x 1/2" Stereo, 4 x 1/4" Mono)
- Channel controls: 8 (Gain, Level, Pan, Select, Spectrum)
- Power: 100W (4 x 1/2" Stereo, 4 x 1/4" Mono)
- Dimensions: 200mm (W) x 100mm (H) x 100mm (D)
- Weight: 1.5kg

4-CHANNEL MIXER / MICRO MIXER

BX-400 4-Channel Mixer

Even though the BX-400 is a compact and lightweight design, each channel has a 3-step input gain selector to allow use with a wide range of sound sources. An especially attractive feature is the peak indicator to help you set optimum mixing levels without distortion or noise, and to give you at-a-glance confirmation of levels.



SPECIFICATIONS

- Controls: Input level select switch x 4, Channel volume x 4, Master volume x 1, Power switch x 1
- Jacks: Input x 4, Output x 1
- Indicators: Peak x 1, Power x 1
- Dimensions: 190(W) x 55(H) x 135(D) mm (7.5" x 2.2" x 5.3")
- Weight: 800 g (1.76 lbs.)

KM-04 4-Channel Micro Mixer

Palm-Sized 4-Channel Micro Mixer.

The ultra-compact design of the KM-04 allows it to be placed anywhere, while its battery-powered operation allows it to be used anywhere. And yet despite its compact dimensions, the KM-04 incorporates four input channels and one output channel. In addition, the KM-04 comes with a peak indicator that helps ensure optimum settings for crisp, clear sound.



SPECIFICATIONS

- Power: 9V Battery • Current draw: DC9V 1mA
- Input sensitivity: 190mV (RMS) • Output level: 2.1V (RMS) • Input impedance: Over 22k Ω
- Output load impedance: Over 10k Ω
- Dimensions: 145(W) x 47(H) x 86(D) mm (5.7" x 1.9" x 3.4") • Weight: 350 g (0.77 lbs.)

DIRECT BOX

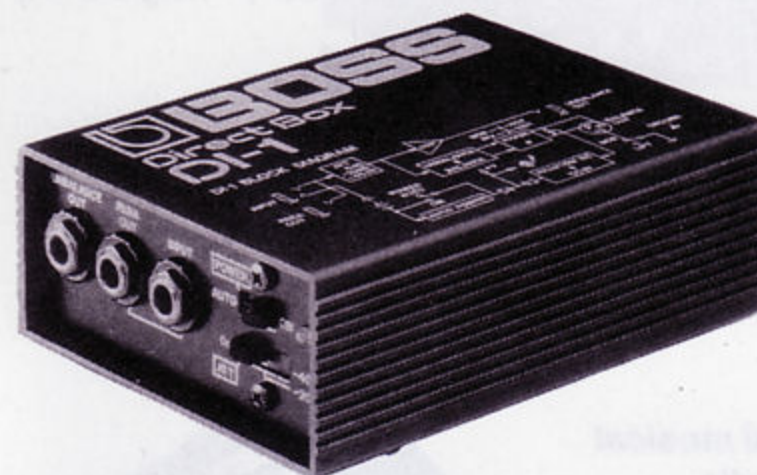
DI-1 Direct Box

Lets you interface virtually any electronic instrument to PA and recording lines while maintaining perfect sound quality.

- The DI-1 converts instrument outputs (unbalanced phone jacks) into line level (balanced XLR connectors) for mixer inputs.
- Active circuitry ensures a wider frequency response and better SN ratio, while the 3-stage input level attenuator lets the DI-1 match your

instrument precisely.

- The balanced output is equipped with a Phase Polarity switch and a Ground switch to cut the ground line between the input and output, while an unbalanced output lets you use the DI-1 as a buffer.
- Built for professional use, the DI-1 is attractively priced to let amateur musicians apply professional techniques to their music-making.



SPECIFICATIONS

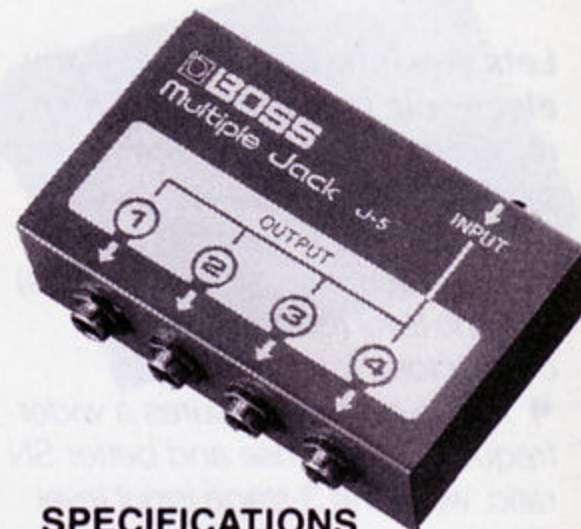
- Power: 9V Battery, Phantom Power (24V to 48V DC) • Input Level: -20dBm • Input Impedance: 4.7M Ω /37k Ω /33k Ω • Maximum Input Level: +45dBm at 1kHz • Output Load Impedance: Over 200 Ω at balanced output, Over 10k Ω at unbalanced output
- Output Level at -20dBm input: -18dBm into 600 Ω load at balanced output, -20dBm into 50k Ω load at unbalanced output • Frequency Response: 20Hz to 40kHz (± 0.5 dB) • Residual Noise: -110dBm or less (IHF-A) • Auto Power Function: Automatically cuts the power after the input level is below -50dBm during 15 minutes • Input Jack: Unbalanced • Output Jacks: Parallel, Unbalanced, Balanced • Switches: Power (Auto/On), Attenuator (0dB/ -20dB/ -40dB), Phase (Nor/Inv), Ground (Nor/Lift) • Dimensions 96.5(W) x 46(H) x 125(D)mm (3¹³/₁₆" x 1¹³/₁₆" x 4¹⁵/₁₆") • Weight: 480 g (1 lb 1 oz)

MULTIPLE JACK

J-5 Multiple Jack

A multiple jack for increasing the number of possible sound variations.

- The J-5 Multiple Jack allows the user to connect a single input to a maximum of four outputs.
- The J-5 is also effective for developing exciting sound techniques, including letting a single guitar simultaneously produce both a normal sound and a sound effect, thus creating a loop incorporating several effect pedals.



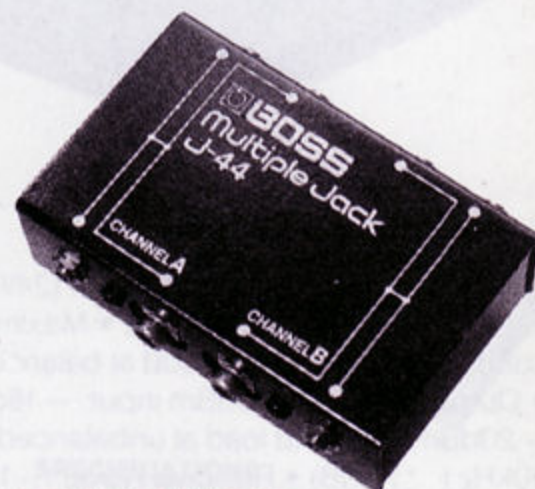
SPECIFICATIONS

Dimensions: 100(W)×38(H)×74(D) mm (3.9"×1.5"×2.9") • Weight: 210 g (0.46 lbs.)

J-44 Multiple Jack

A handy accessory for connecting professional musical instruments to home audio equipment.

- The J-44 Multiple Jack allows the user to connect a musical instrument that is equipped with either mini phone jack or RCA (pin) jack.
- The J-44 significantly simplifies on-line recording on a cassette deck of performances by a guitar or keyboard.
- The J-44 can be used with stereo equipment in a wide array of applications.



SPECIFICATIONS

Jacks: Phone jack × 4, RCA jack × 2 Mini-phone jack × 2 • Dimensions: 100(W)×38(H)×74(D) mm (3.9"×1.5"×2.9") • Weight: 230 g (0.5 lbs.)

**BOSS
IS
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